

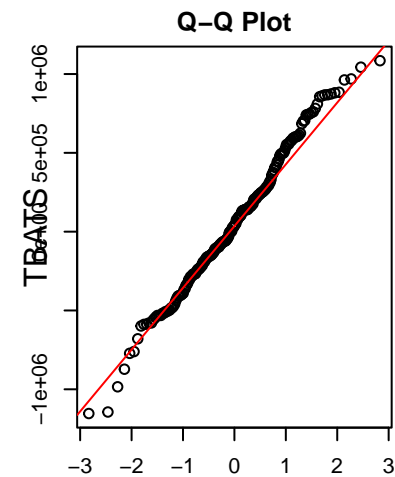
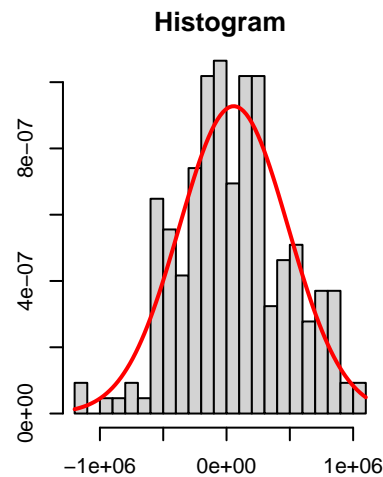
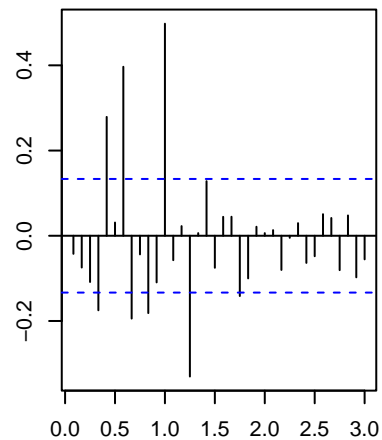
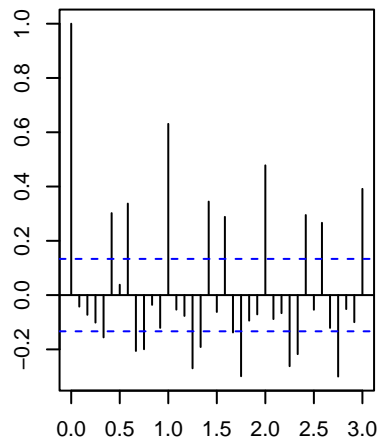
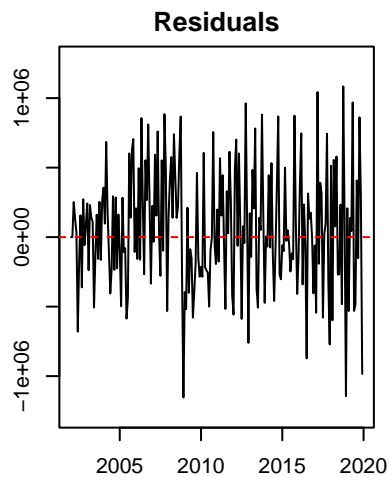
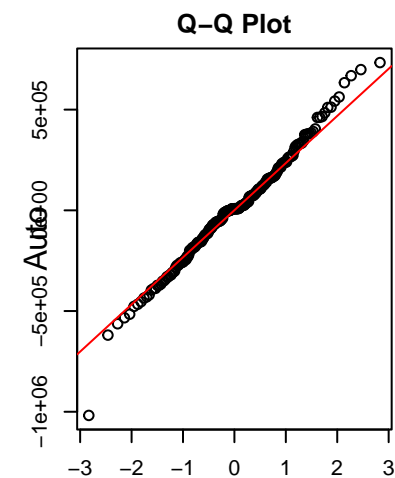
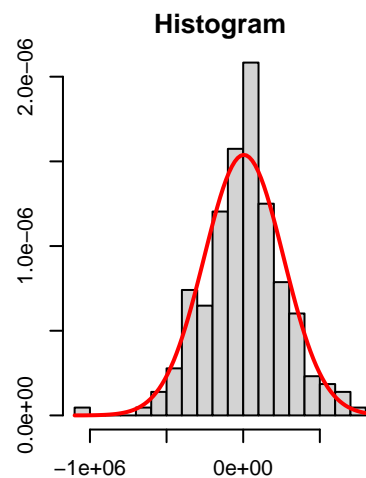
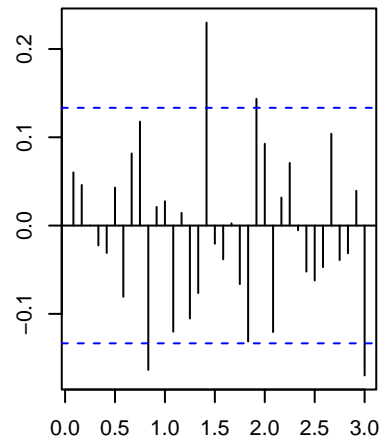
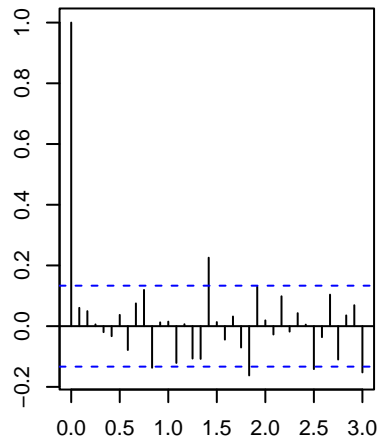
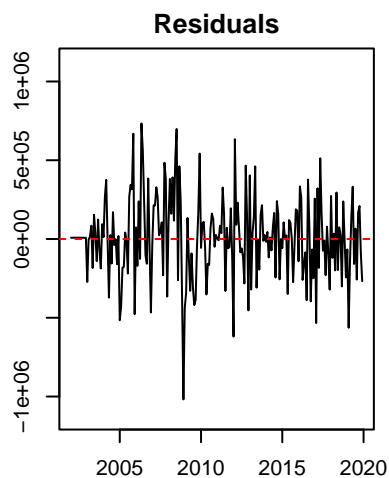
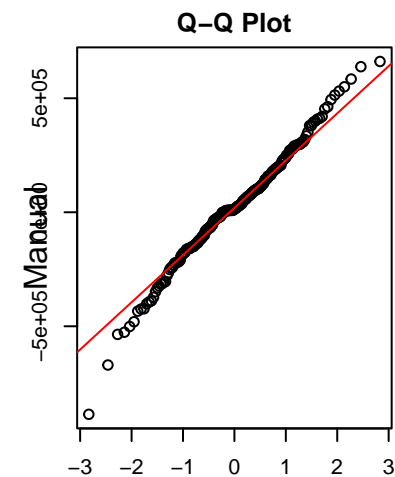
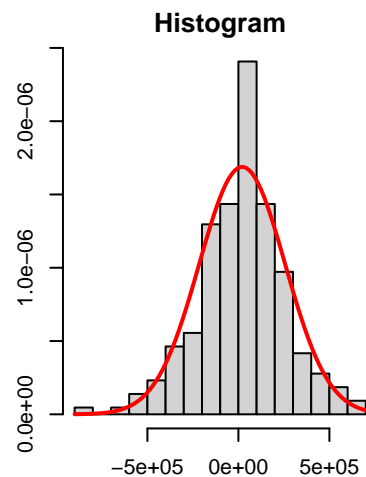
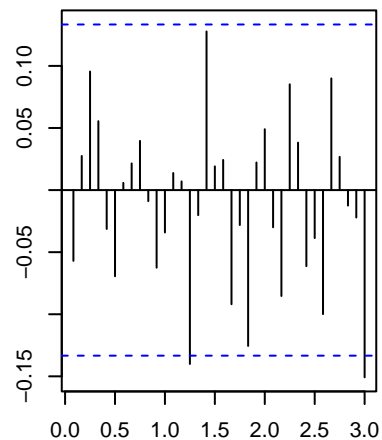
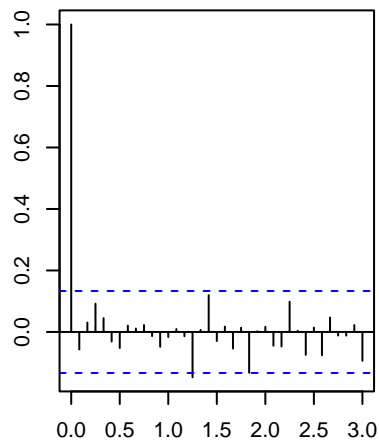
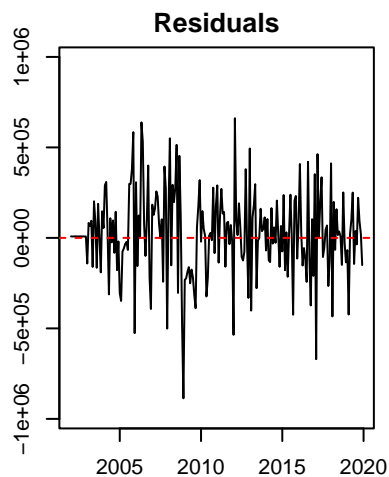
Enhanced Model Diagnostics Report

Generated on: 2025-04-30 11:48:17

Number of Jurisdictions: 46

Includes: Ljung-Box, Normality, Heteroscedasticity, and Seasonality Tests

Enhanced Residual Diagnostics for Jurisdiction I

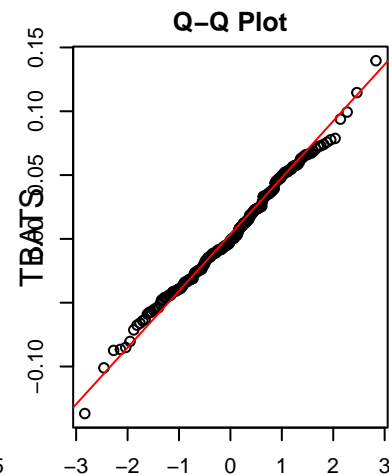
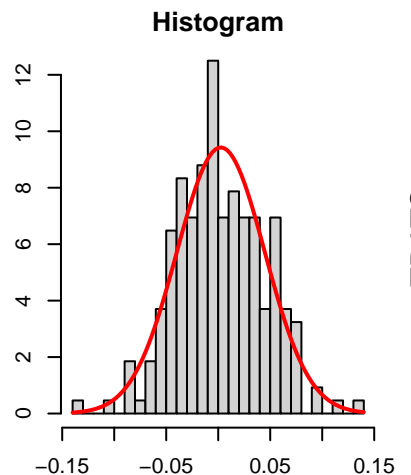
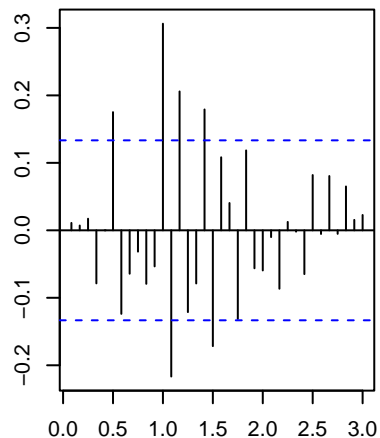
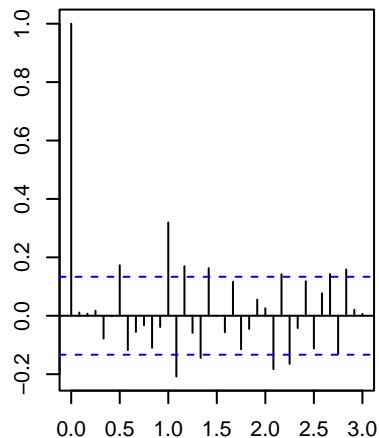
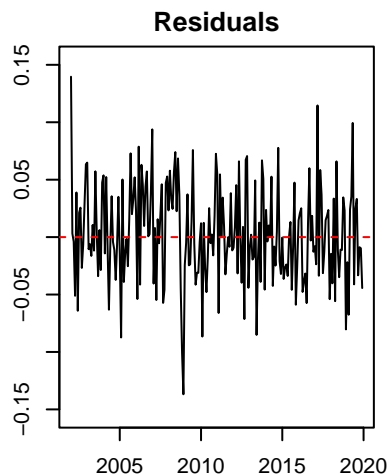
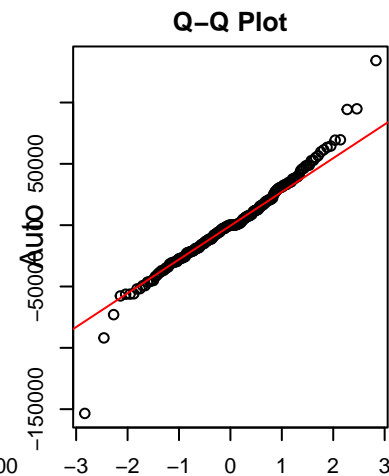
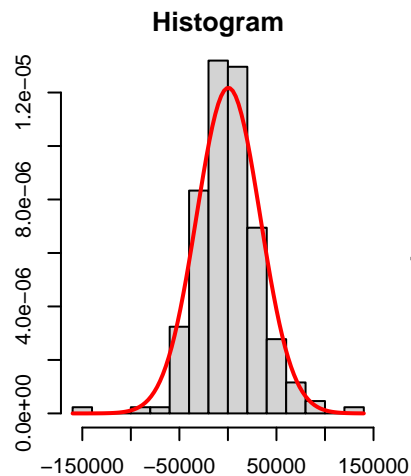
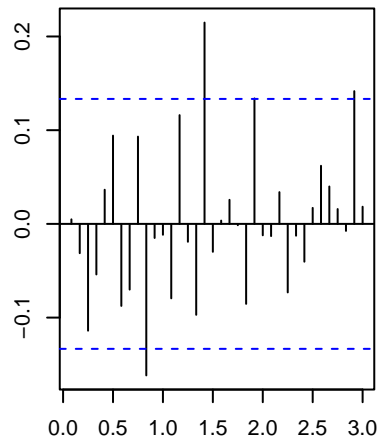
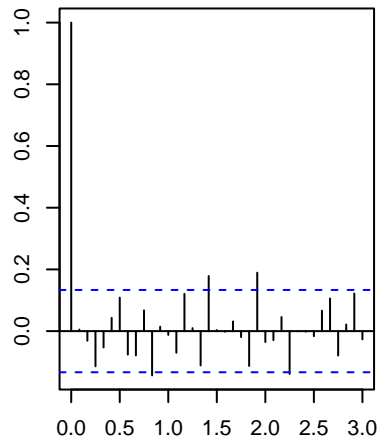
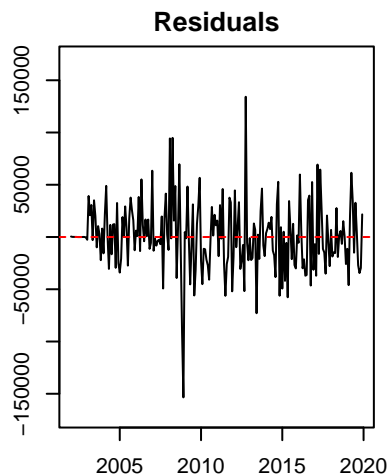
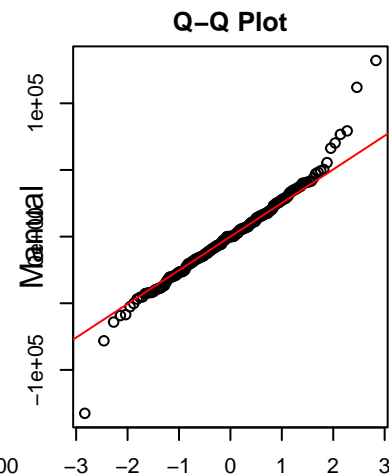
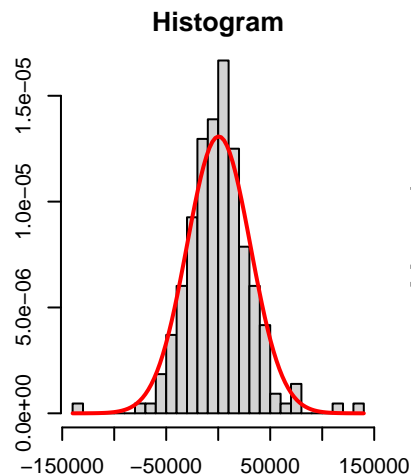
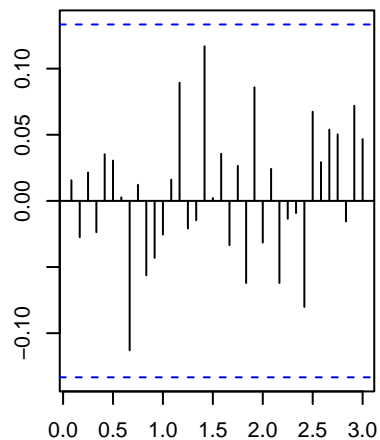
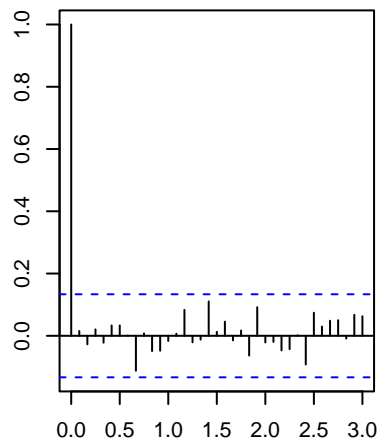
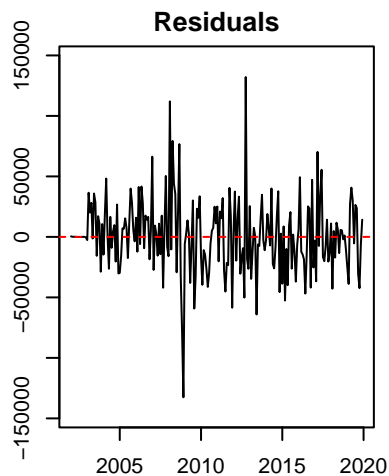


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(3,0,3)×(1,1,1)_1
Ljung-Box Tests:
lag=2: X2=4.34, p=0.114, PASS
lag=12: X2=14.47, p=0.271, PASS
lag=16: X2=18.86, p=0.276, PASS
Normality: W=0.987, p=0.0441, FAIL (not normal)
H test: X2=40.65, p=5.62e-05, FAIL (ARCH effect)
Quality ratio: 0.077, PASS (no remaining seasonality)
CF plots and Ljung-Box tests show conflict in annual model

Auto model: Auto: SARIMA(3,0,0)×(0,1,2)_12
Ljung-Box Tests:

Enhanced Residual Diagnostics for Jurisdiction Z

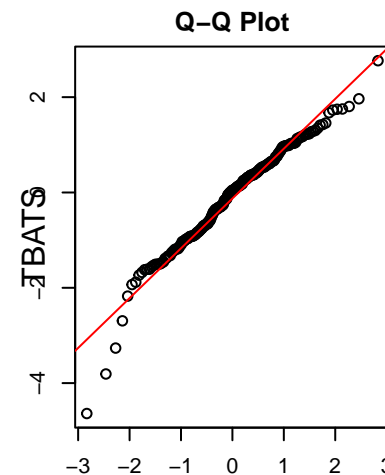
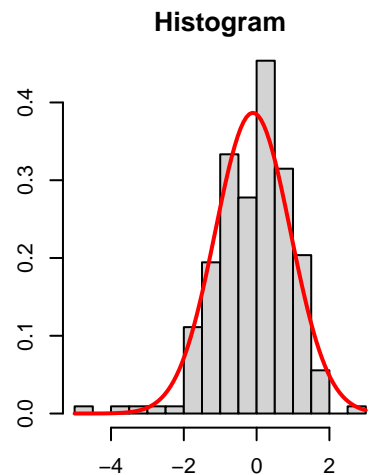
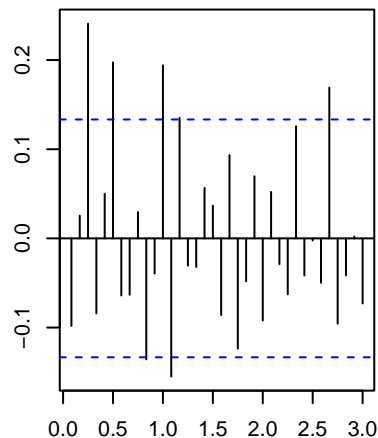
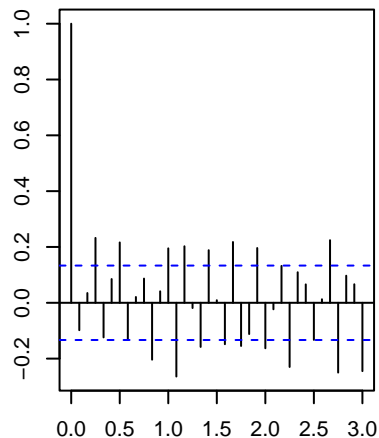
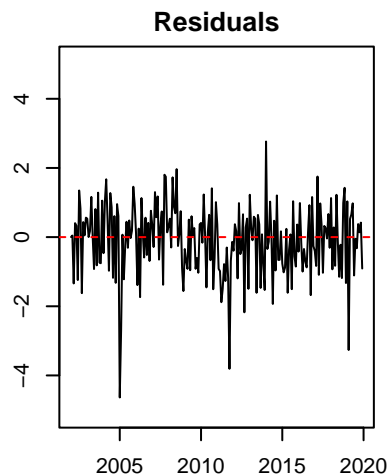
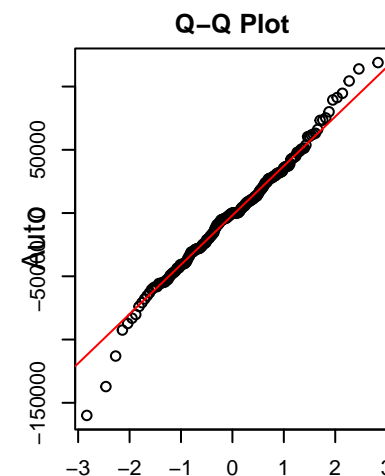
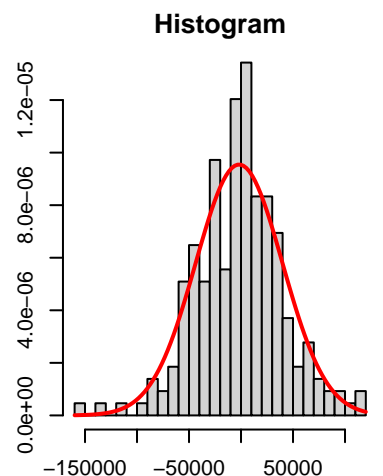
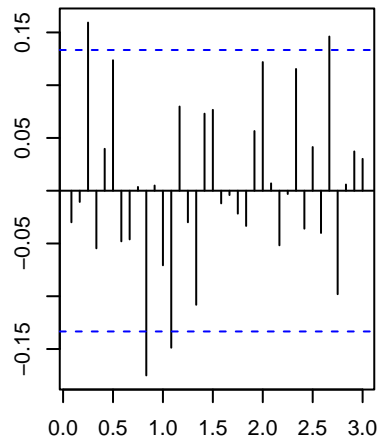
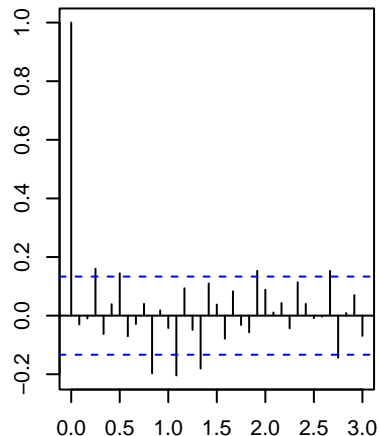
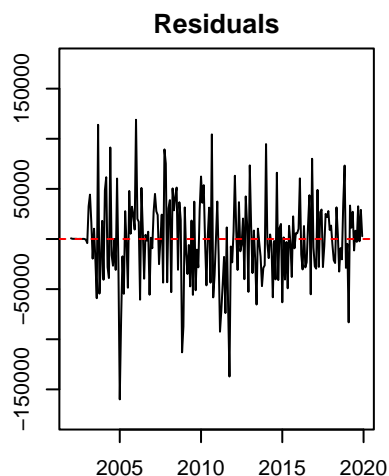
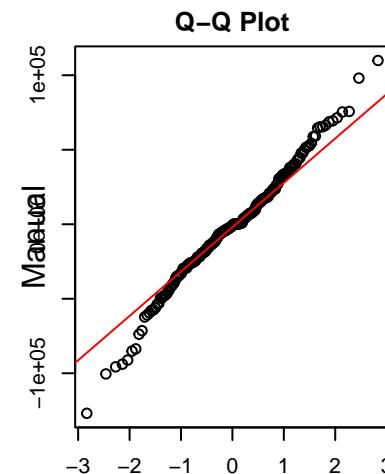
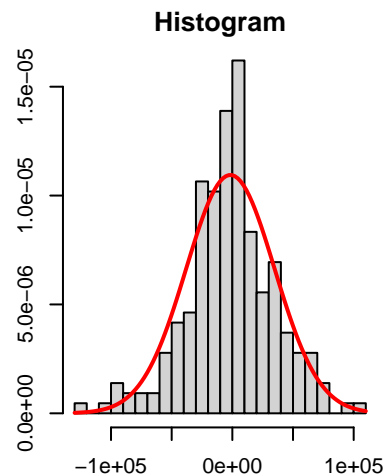
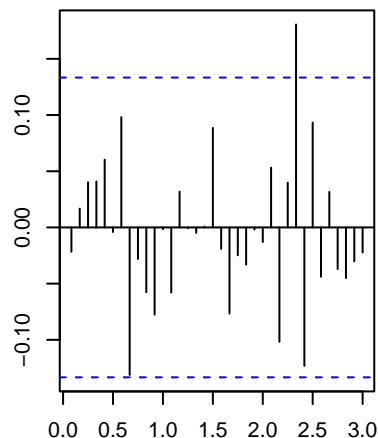
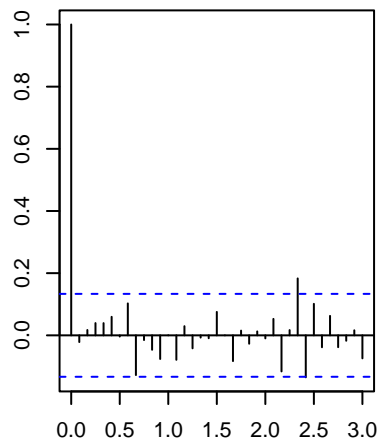
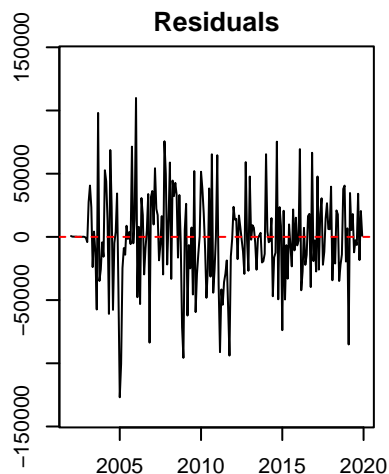


MODEL DIAGNOSTIC RESULTS

```
annual model: Manual: SARIMA(2,1,3)x(0,1,2)_1
                Ljung-Box Tests:
                lag=3: X2=4.33, p=0.228, PASS
                lag=13: X2=10.17, p=0.68, PASS
                lag=17: X2=13.39, p=0.71, PASS
normality: W=0.965, p=3.17e-05, FAIL (not norm
CH test: X2=31.59, p=0.0016, FAIL (ARCH effe
quality ratio: 0.075, PASS (no remaining seas

Auto model: Auto: SARIMA(2,1,1)x(0,1,2)_12
                Ljung-Box Tests:
                lag=5: X2=15.24, p=0.00938, FAIL
```

Enhanced Residual Diagnostics for Jurisdiction 3

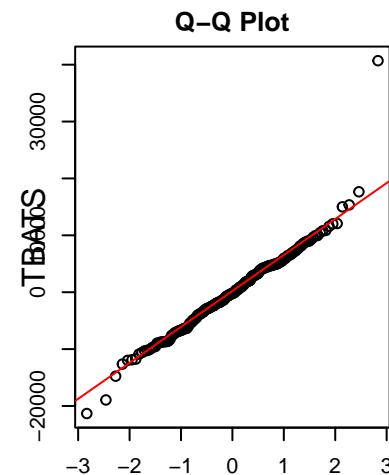
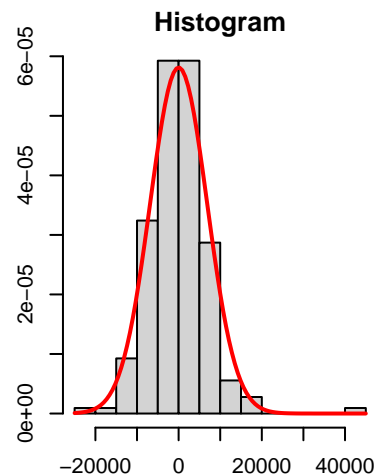
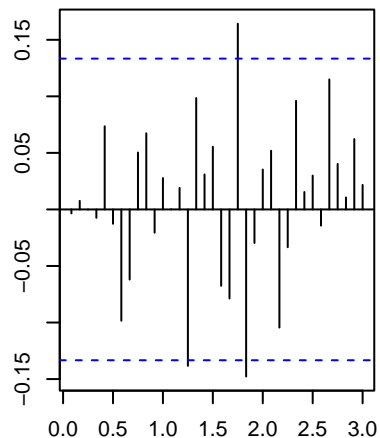
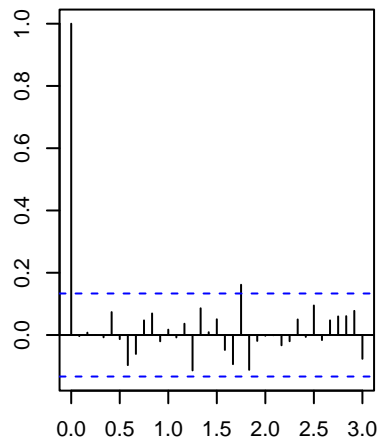
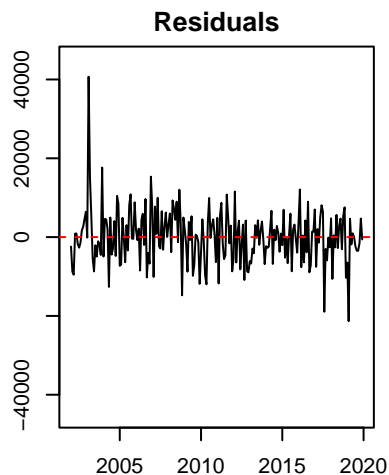
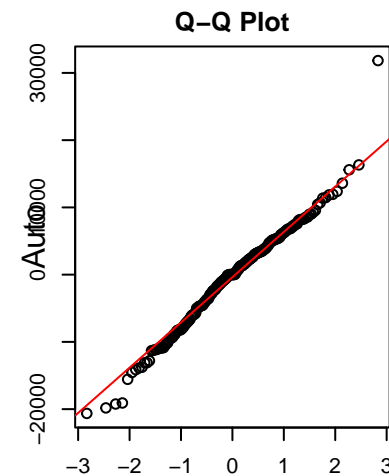
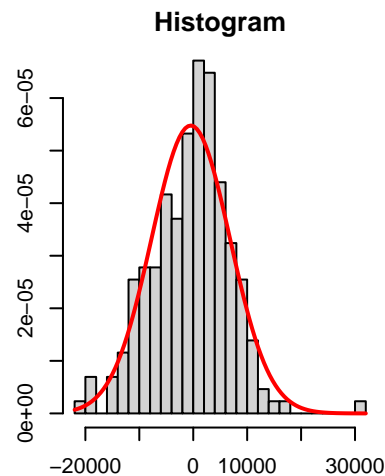
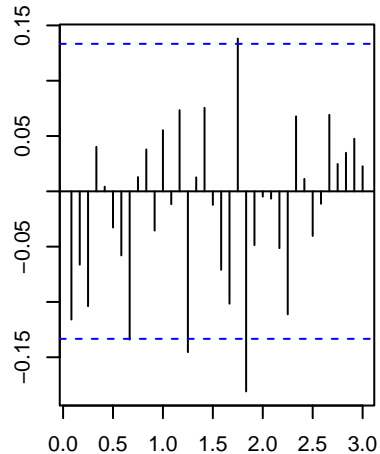
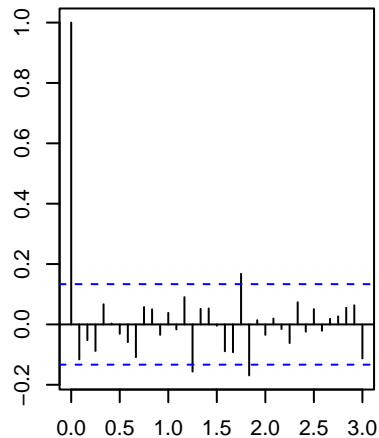
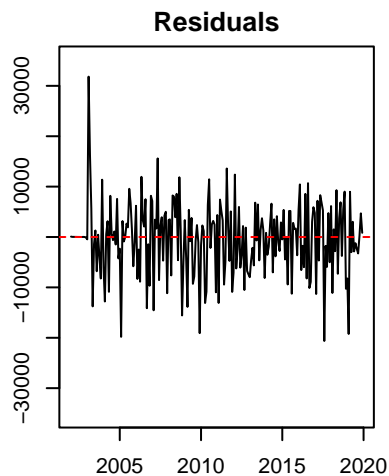
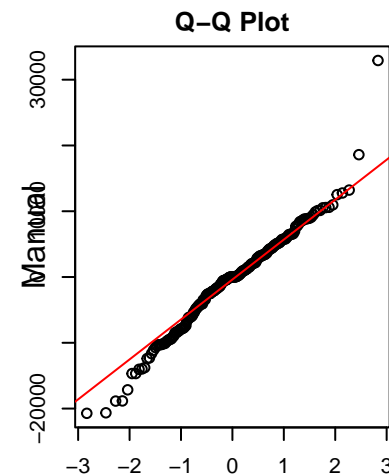
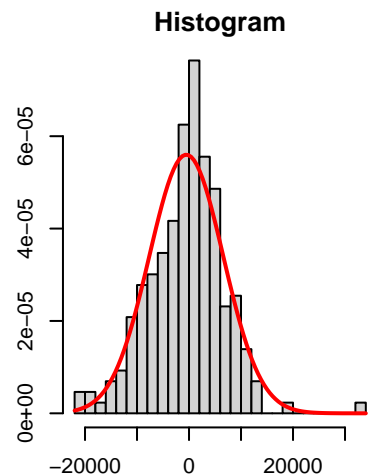
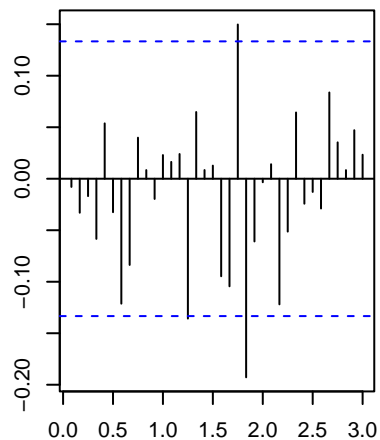
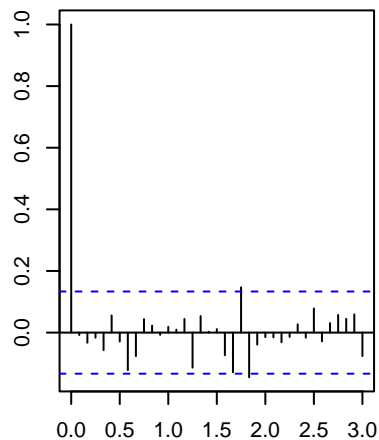
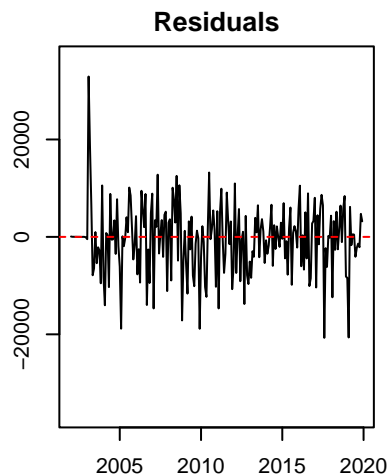


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,3)×(0,1,2)_1
Ljung-Box Tests:
lag=3: X2=8.27, p=0.0407, FAIL
lag=13: X2=14.69, p=0.327, PASS
lag=17: X2=14.99, p=0.596, PASS
Normality: W=0.987, p=0.0461, FAIL (not normal)
QCH test: X2=20.46, p=0.0588, PASS (constant variance)
Quality ratio: 0.040, PASS (no remaining seasonality)

Auto model: Auto: SARIMA(0,1,1)×(2,1,2)_12
Ljung-Box Tests:
lag=5: X2=22.27, p=0.000465, FAIL

Enhanced Residual Diagnostics for Jurisdiction 5

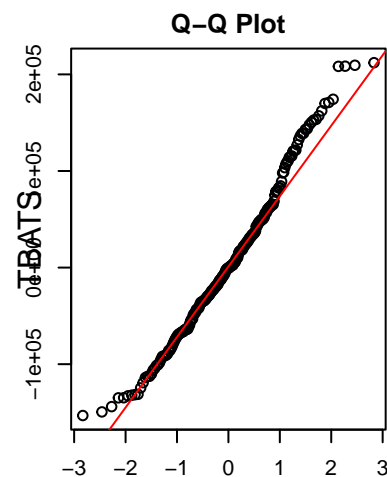
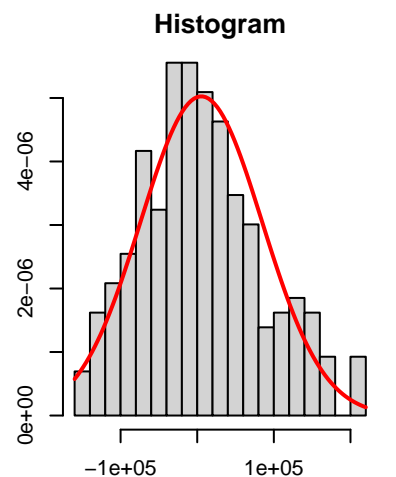
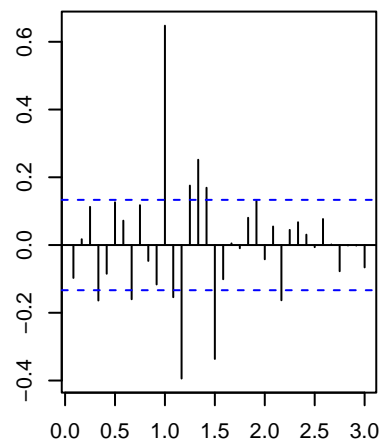
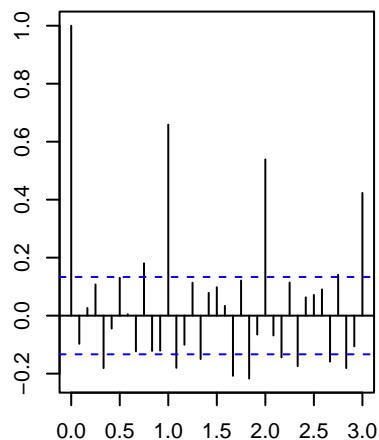
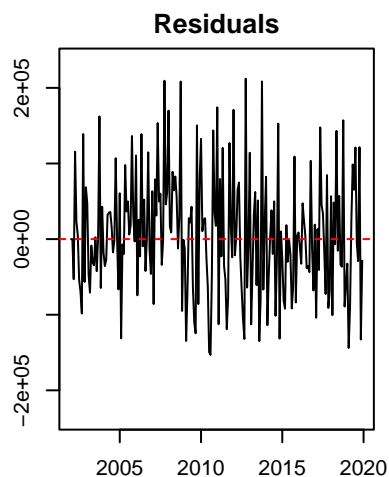
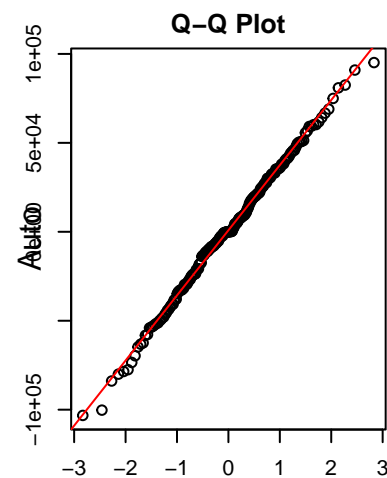
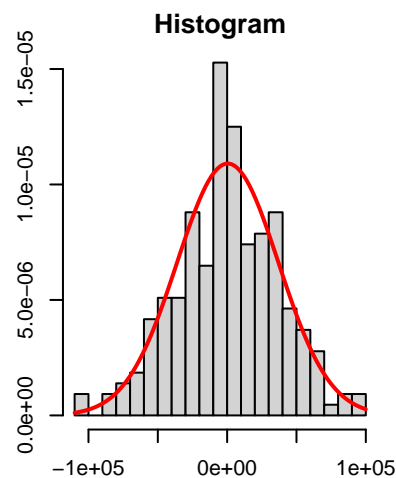
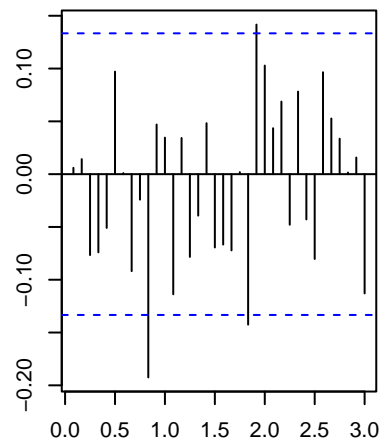
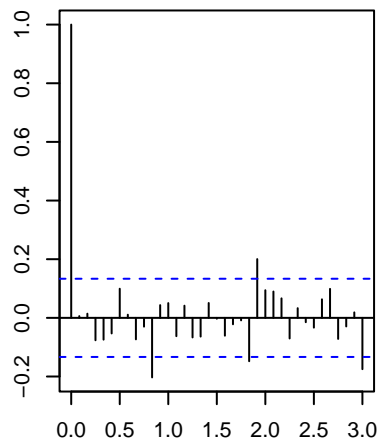
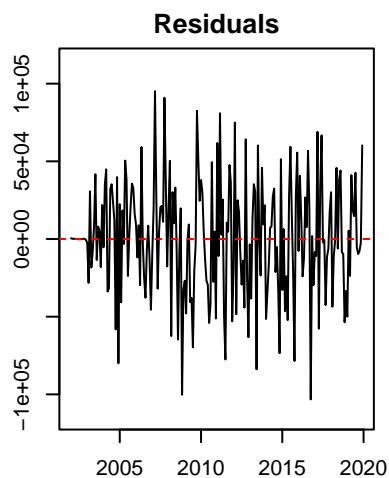
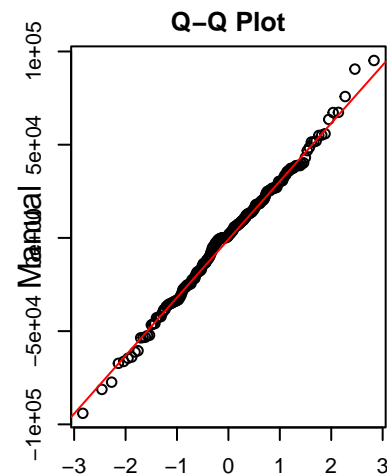
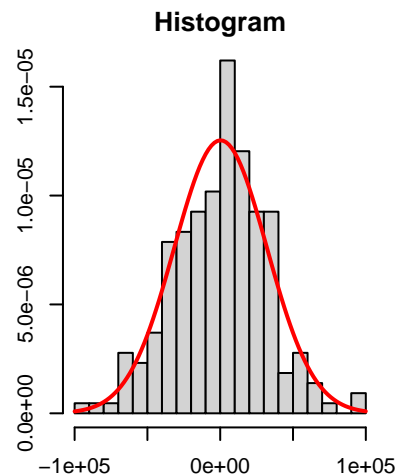
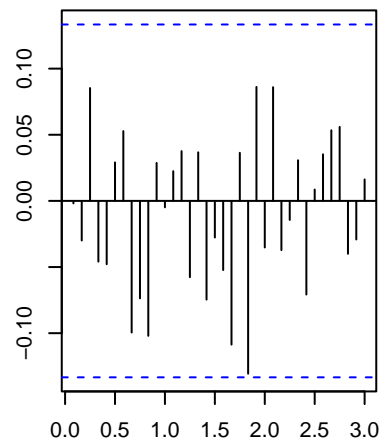
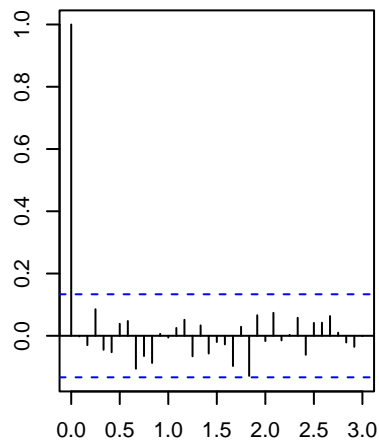
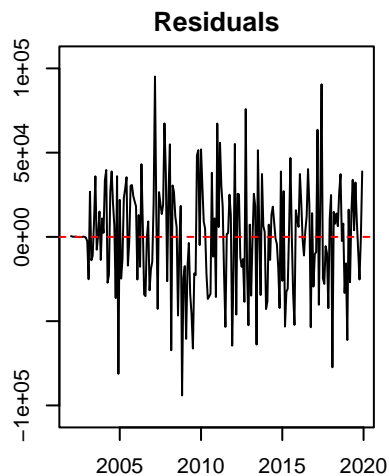


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(3,1,2)x(0,1,1)_1
Ljung-Box Tests:
lag=4: X2=7.12, p=0.13, PASS
lag=14: X2=16.70, p=0.272, PASS
lag=18: X2=27.46, p=0.0708, PASS
normality: W=0.972, p=0.000316, FAIL (not normal)
ARCH test: X2=8.23, p=0.767, PASS (const. variance)
quality ratio: 0.055, PASS (no remaining seasonality)
CF plots and Ljung-Box tests show conflict in

Auto model: Auto: SARIMA(2,1,2)x(0,1,1)_12
Ljung-Box Tests:

Enhanced Residual Diagnostics for Jurisdiction 7

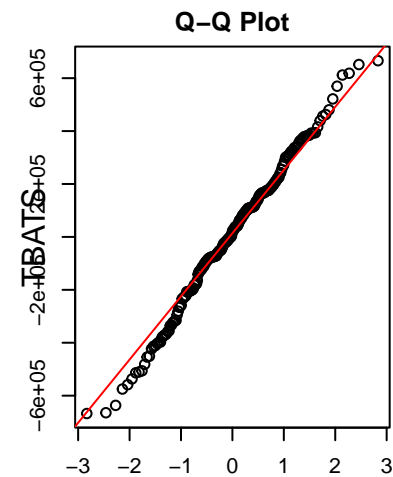
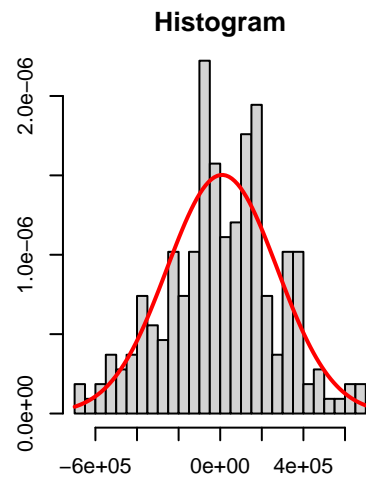
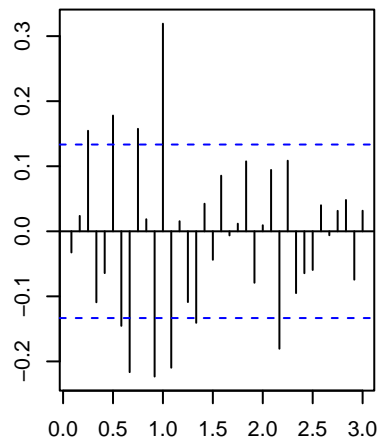
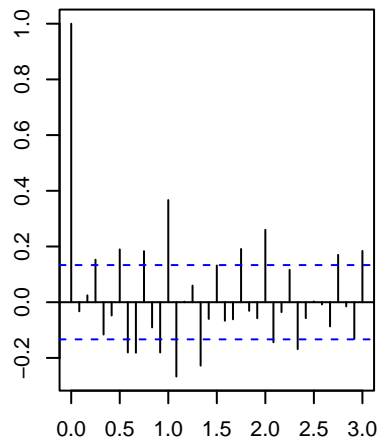
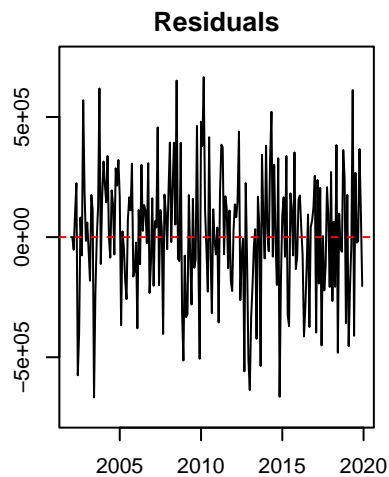
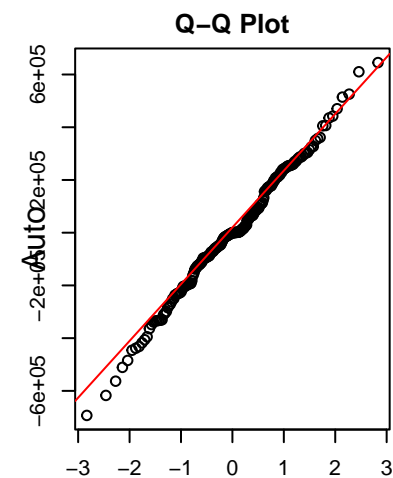
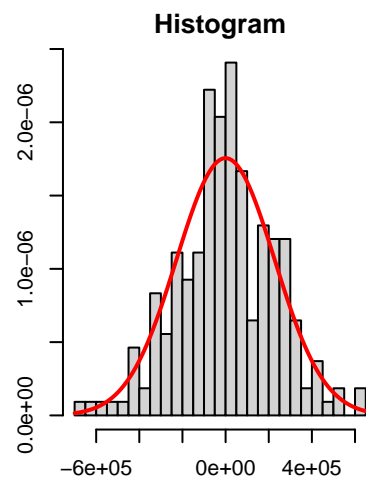
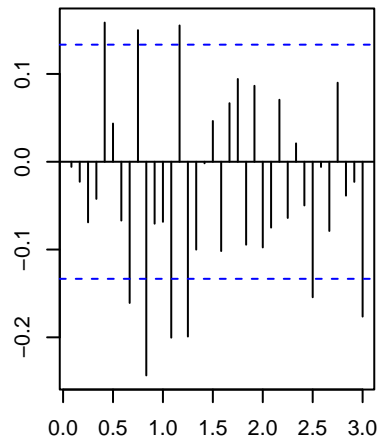
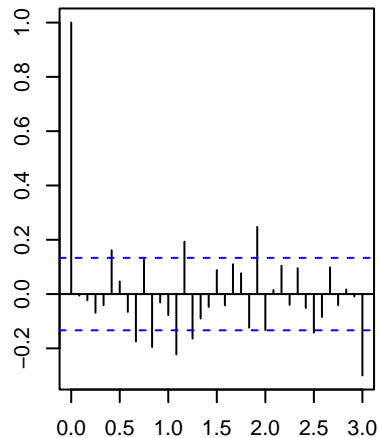
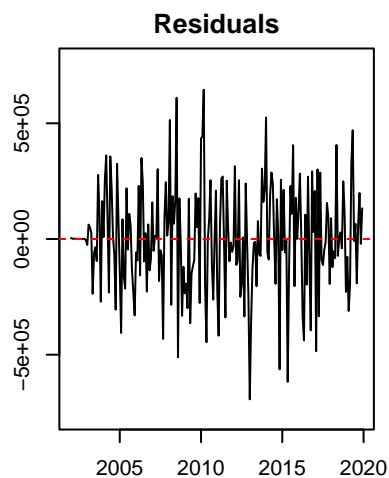
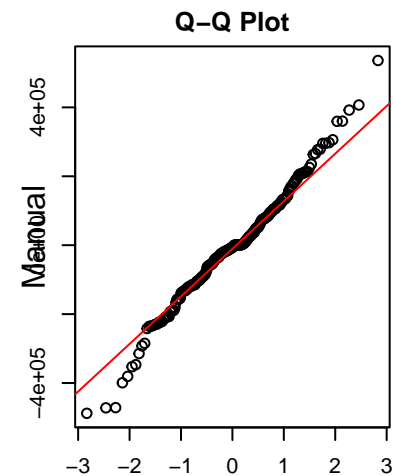
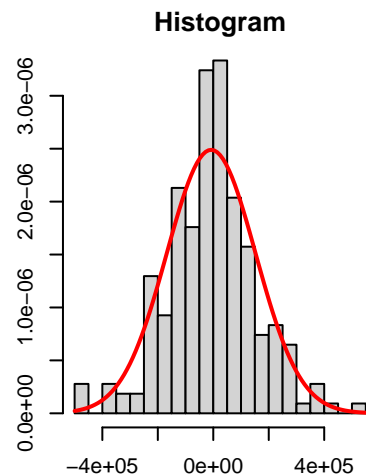
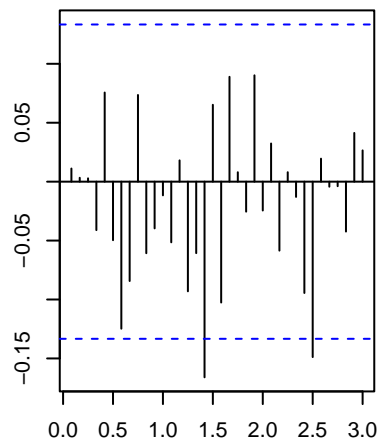
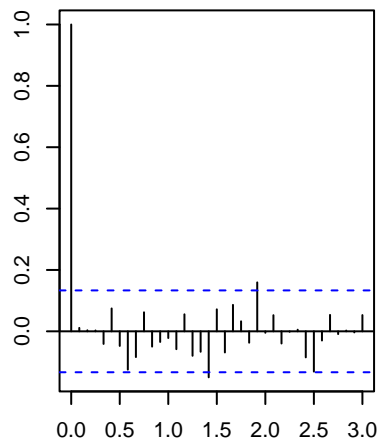
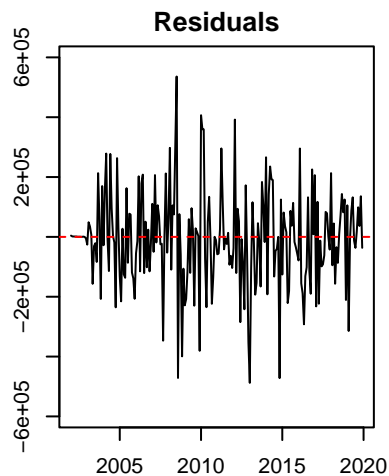


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,3)x(2,1,2)_1
Ljung-Box Tests:
lag=1: X2=8.95, p=0.00278, FAIL
lag=11: X2=14.30, p=0.217, PASS
lag=15: X2=19.66, p=0.185, PASS
Normality: W=0.995, p=0.661, PASS (normal)
QCH test: X2=20.95, p=0.0512, PASS (const. var)
Quality ratio: 0.038, PASS (no remaining seasonality)
CF plots and Ljung-Box tests show conflict in

Auto model: Auto: SARIMA(2,1,1)x(0,1,2)_12
Ljung-Box Tests:

Enhanced Residual Diagnostics for Jurisdiction 8

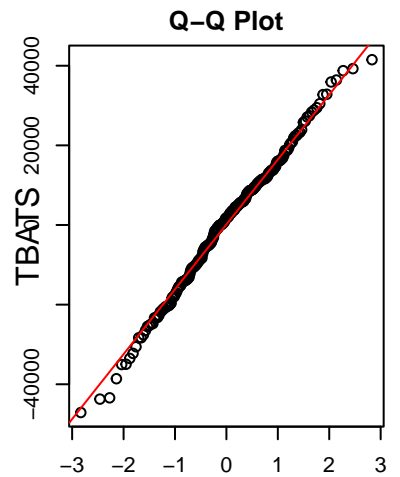
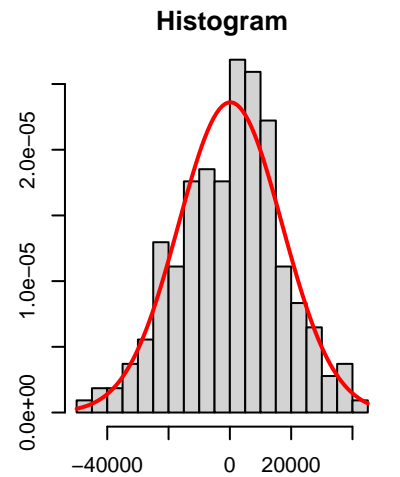
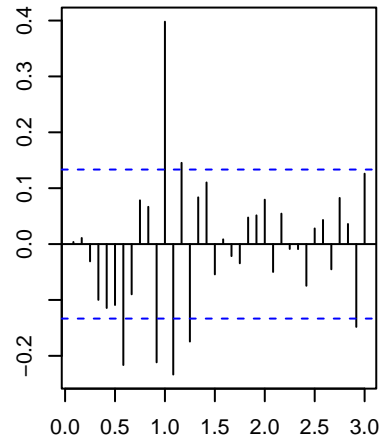
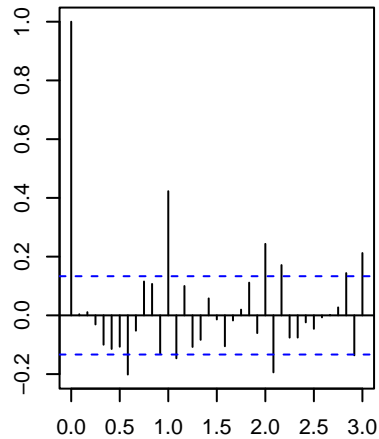
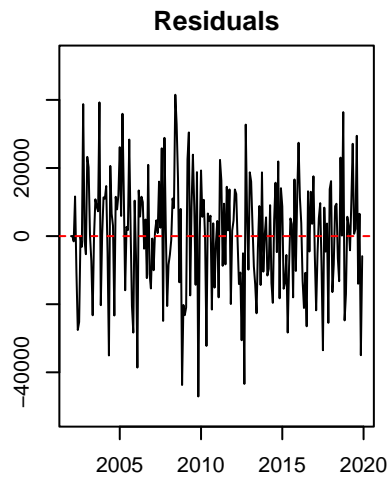
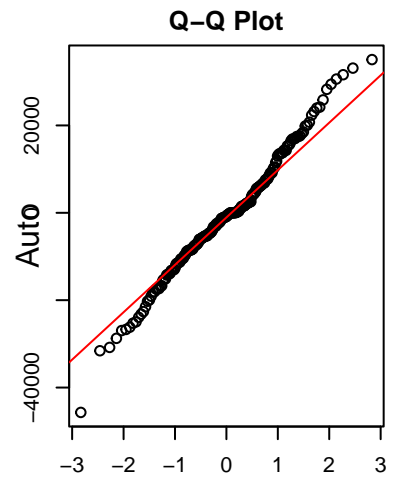
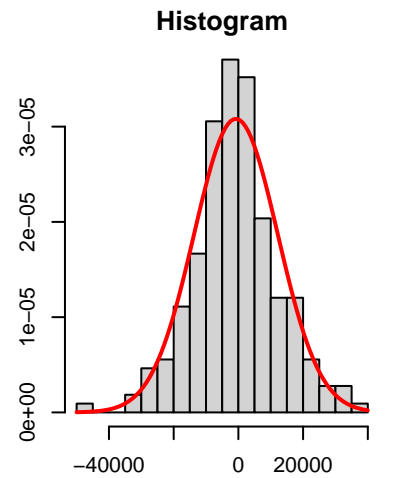
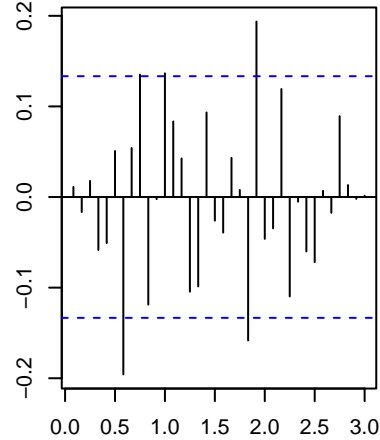
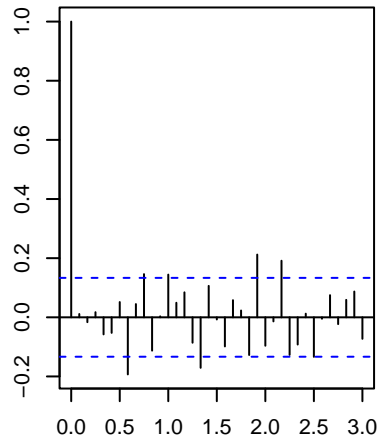
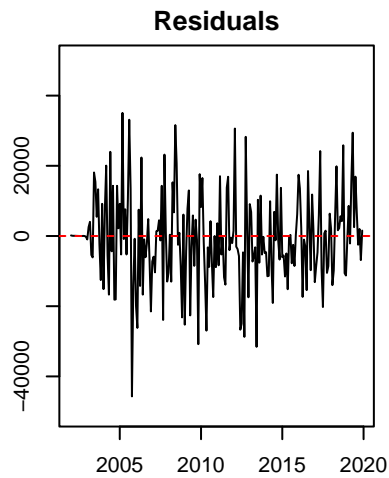
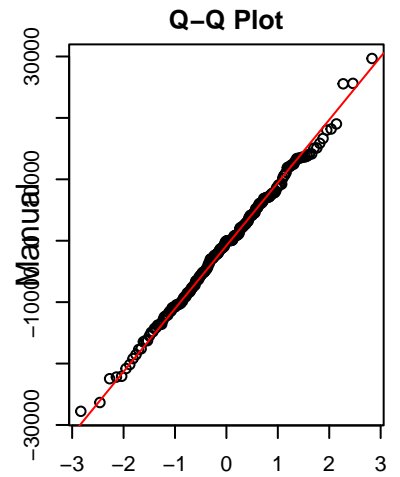
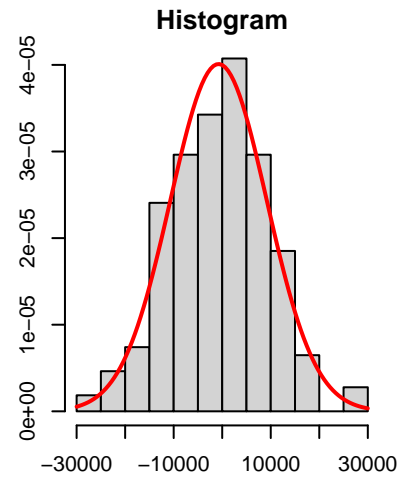
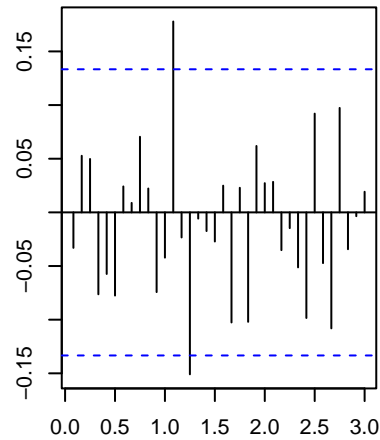
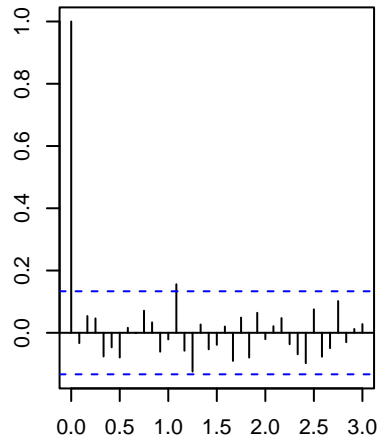
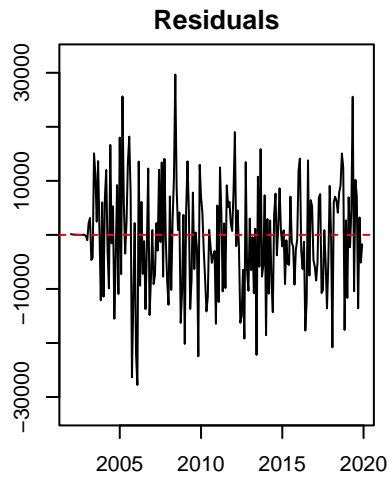


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,0)x(2,1,3)_1
Ljung-Box Tests:
lag=3: X2=8.71, p=0.0334, FAIL
lag=13: X2=22.59, p=0.0468, FAIL
lag=17: X2=29.40, p=0.031, FAIL
Normality: W=0.985, p=0.0211, FAIL (not normal)
CH test: X2=21.76, p=0.0403, FAIL (ARCH effect)
Likelihood ratio: 0.050, PASS (no remaining seasonality)

Auto model: Auto: SARIMA(2,1,1)x(2,1,0)_12
Ljung-Box Tests:
lag=5: X2=28.01, p=3.62e-05, FAIL

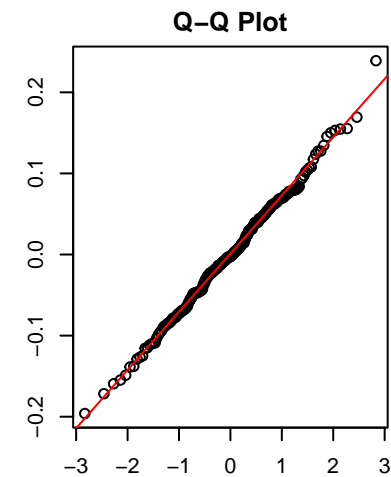
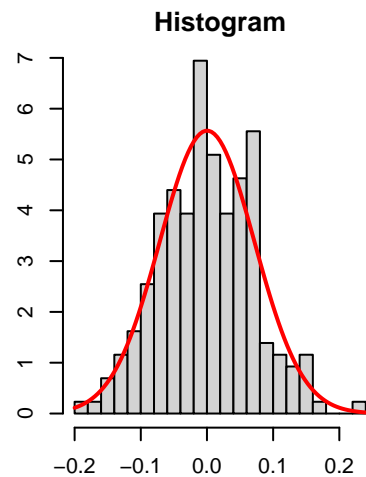
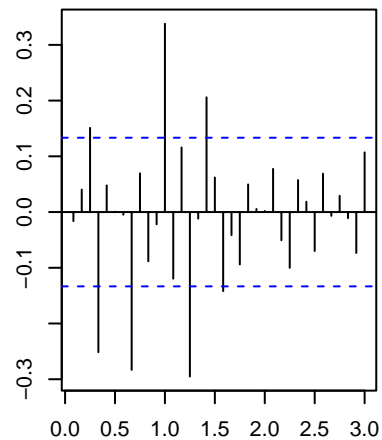
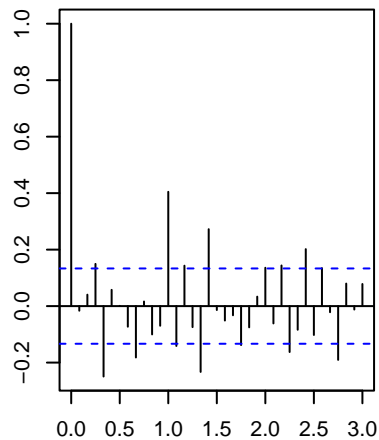
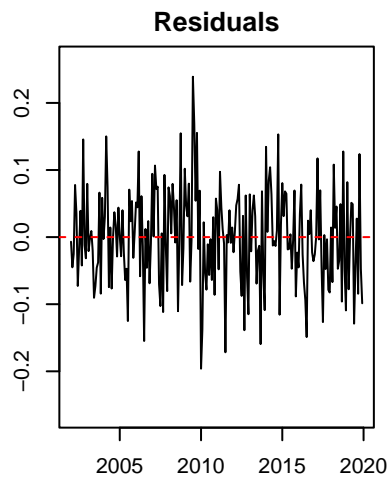
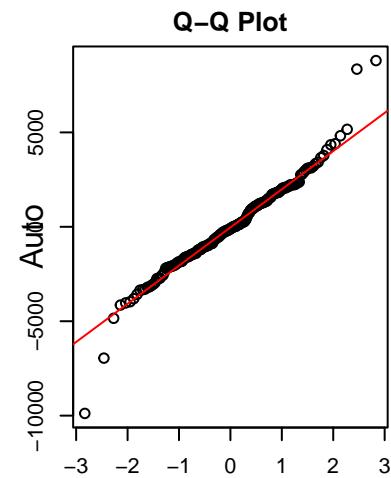
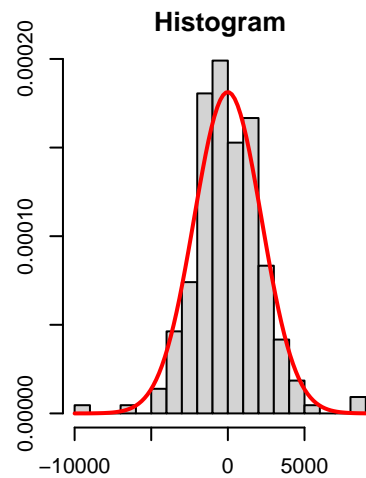
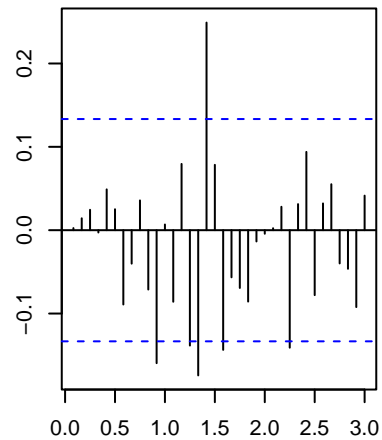
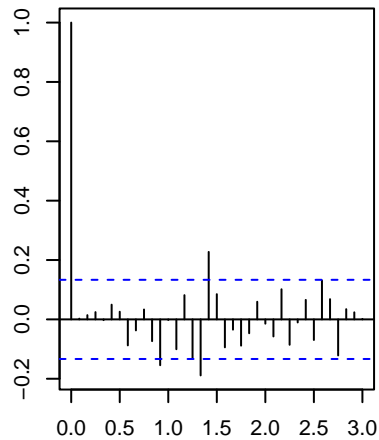
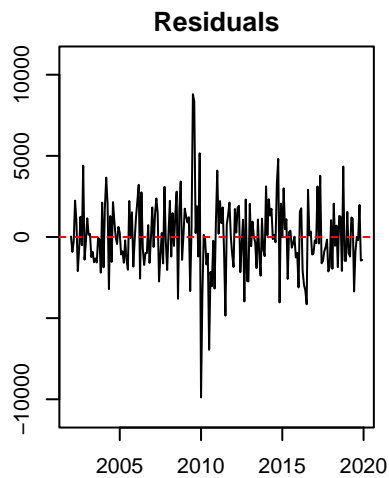
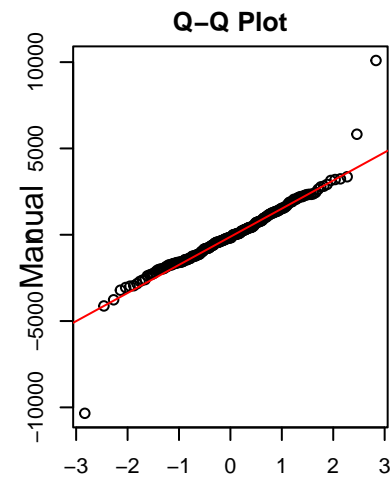
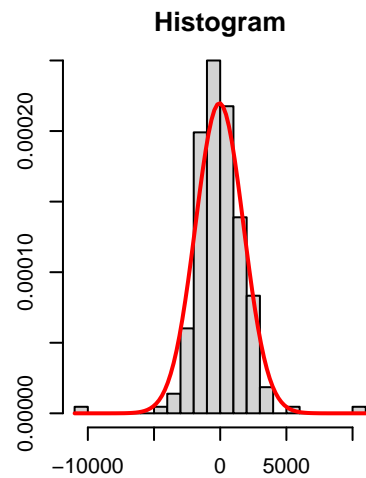
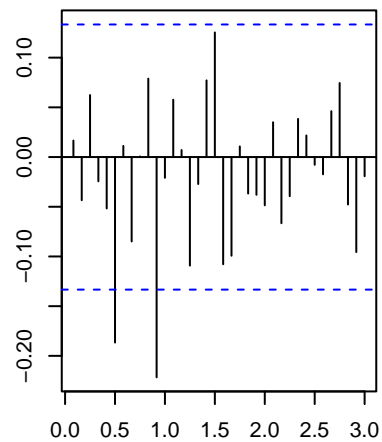
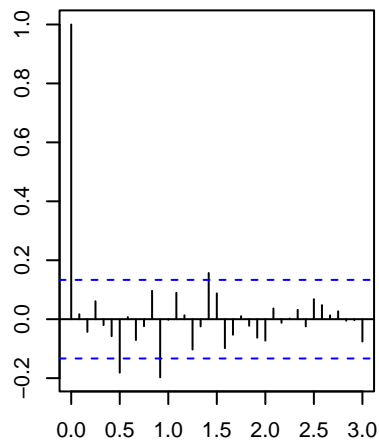
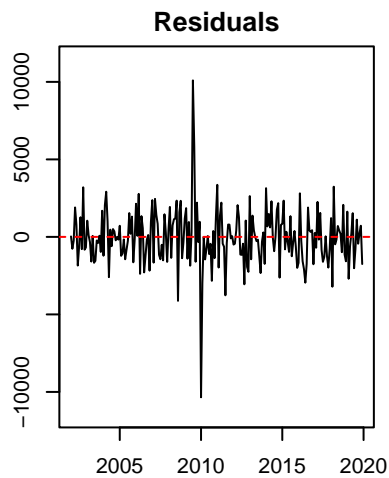
Enhanced Residual Diagnostics for Jurisdiction 12



MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(3,1,3)×(3,1,3)_1
Ljung-Box Tests:
lag=8: X2=20.22, p=0.00953, FAIL
lag=12: X2=23.44, p=0.0242, FAIL
Normality: W=0.997, p=0.927, PASS (normal)
RCH test: X2=17.29, p=0.139, PASS (const. va
ality ratio: 0.046, PASS (no remaining seas

Auto model: Auto: SARIMA(0,1,4)×(0,1,1)_12
Ljung-Box Tests:
lag=5: X2=18.72, p=0.00216, FAIL
lag=15: X2=40.18, p=0.000426, FAIL



Enhanced Residual Diagnostics for Jurisdiction 16

Diag Error

MODEL DIAGNOSTIC RESULTS

Manual model: Manual: SARIMA(2,1,3)x(1,0,2)_1

Ljung-Box Tests:

lag=2: X2=12.90, p=0.00158, FAIL

lag=12: X2=36.98, p=0.000225, FAIL

lag=16: X2=39.38, p=0.000958, FAIL

Normality: W=0.913, p=6.53e-10, FAIL (not normal)

H test: X2=52.12, p=5.91e-07, FAIL (ARCH effect)

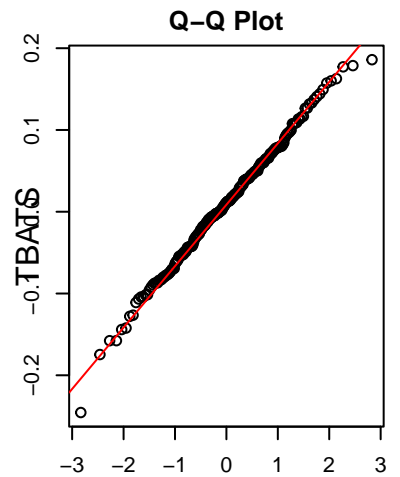
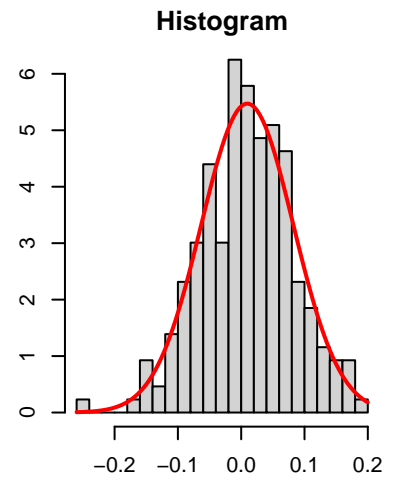
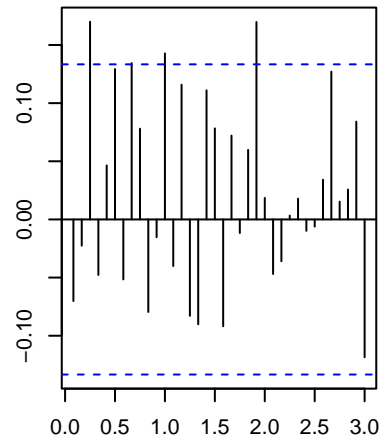
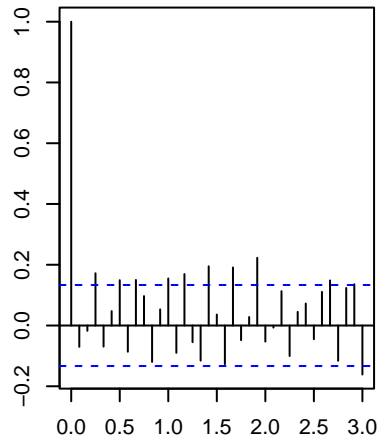
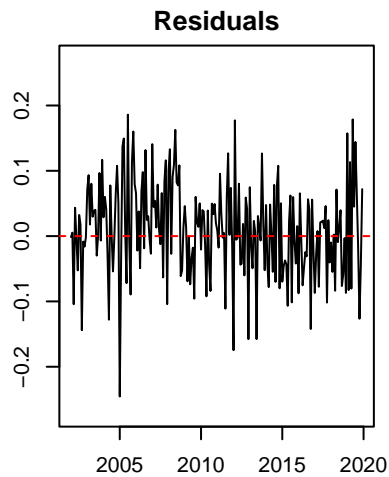
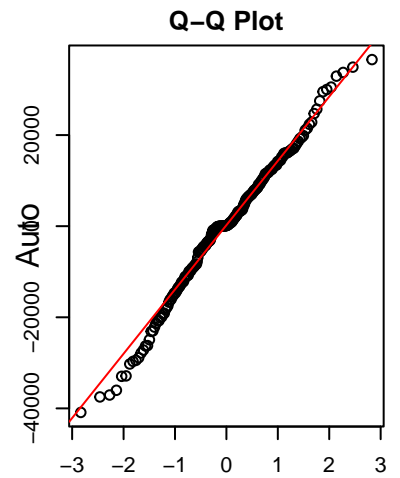
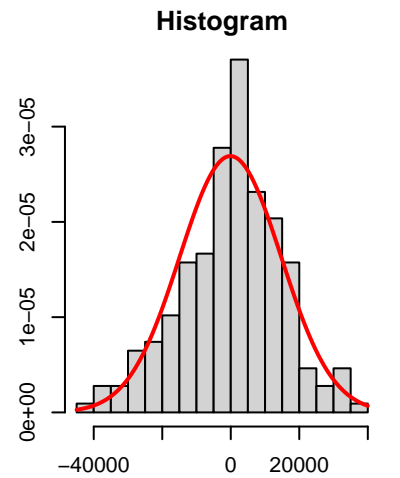
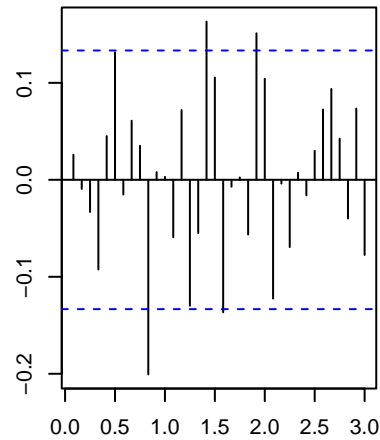
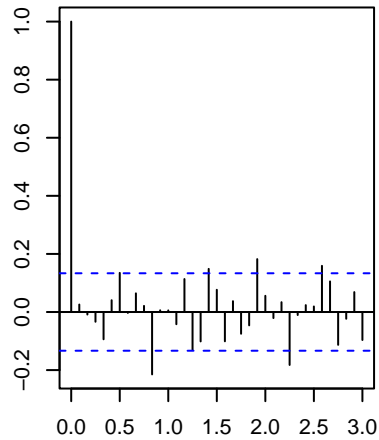
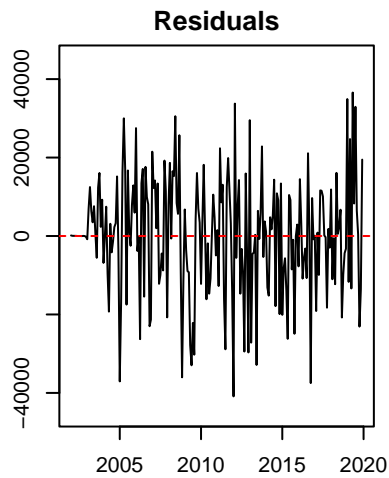
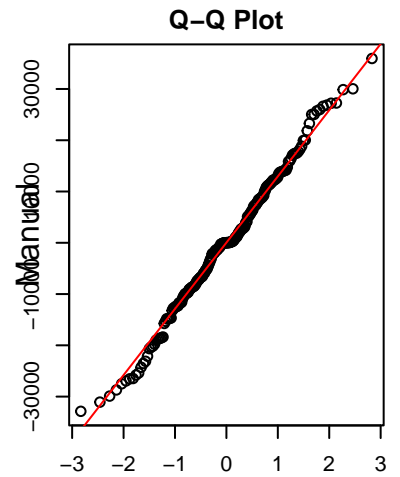
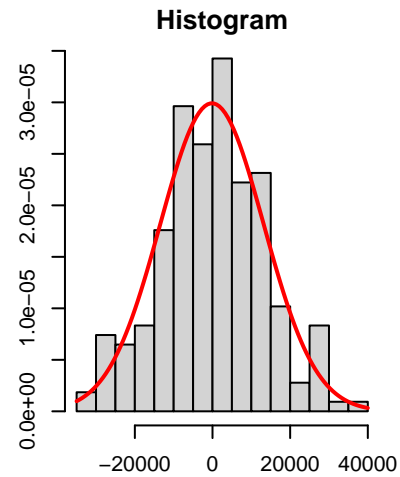
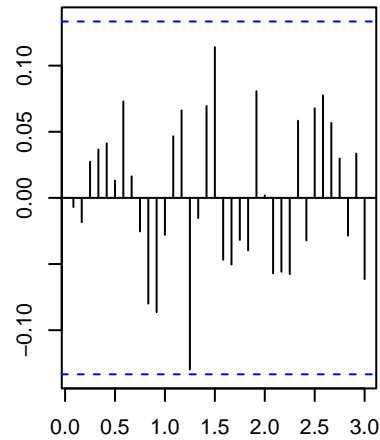
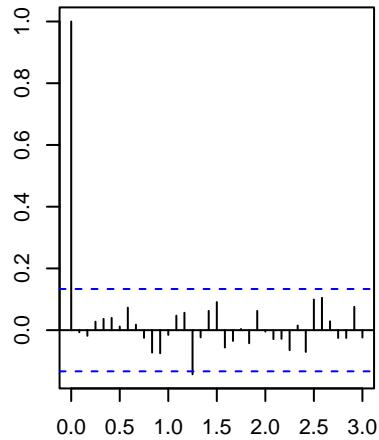
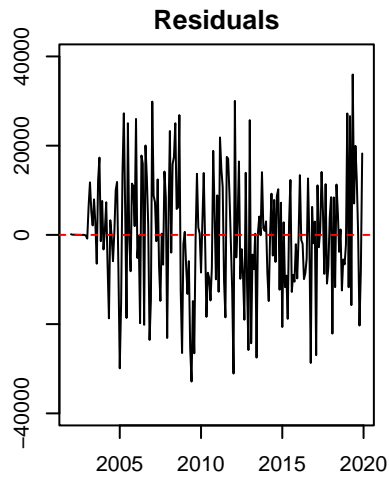
Quality ratio: 0.088, PASS (no remaining seasonality)

Auto model: Auto: SARIMA(0,1,4)x(1,0,0)_12

Ljung-Box Tests:

lag=5: X2=4.40, p=0.494, PASS

Enhanced Residual Diagnostics for Jurisdiction 19

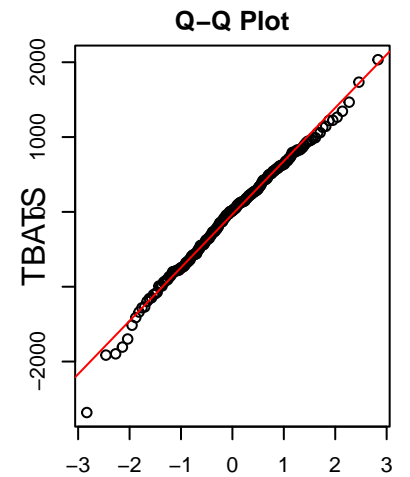
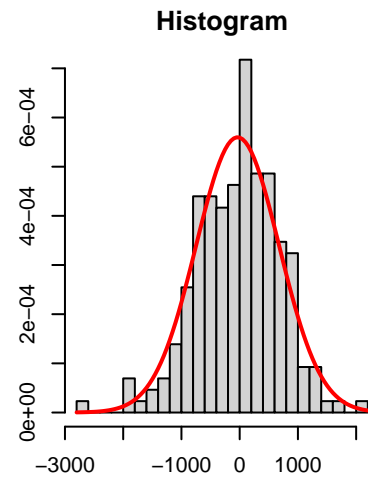
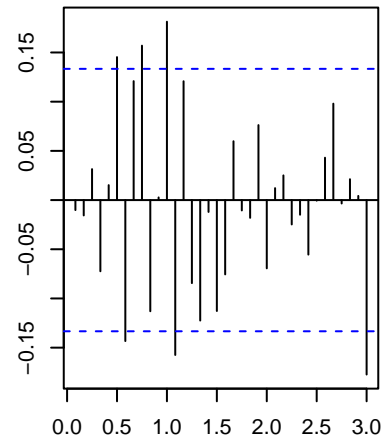
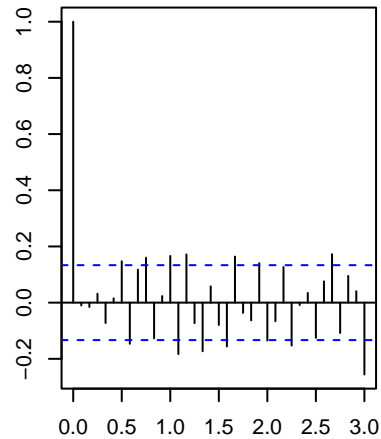
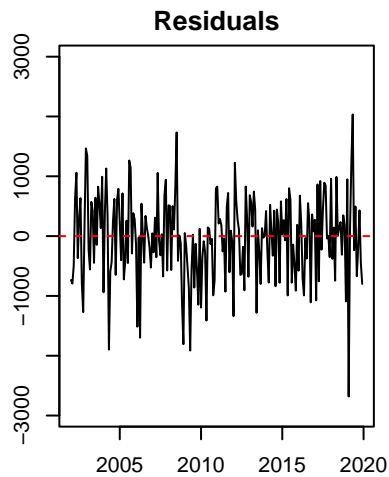
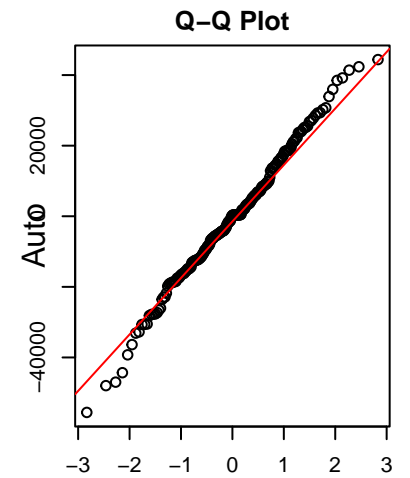
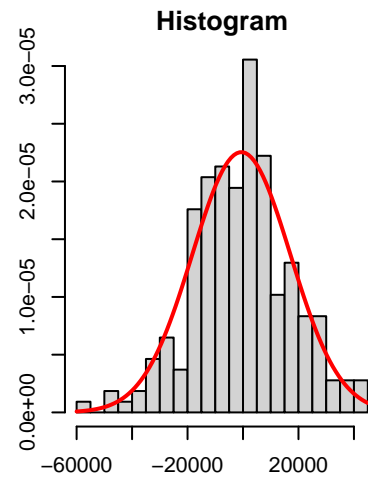
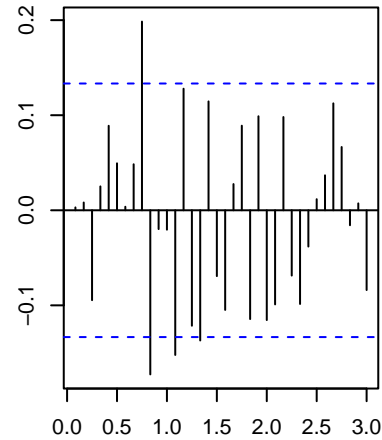
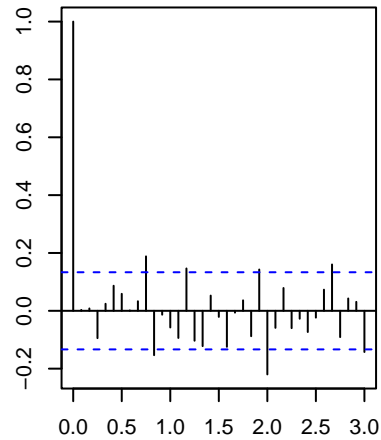
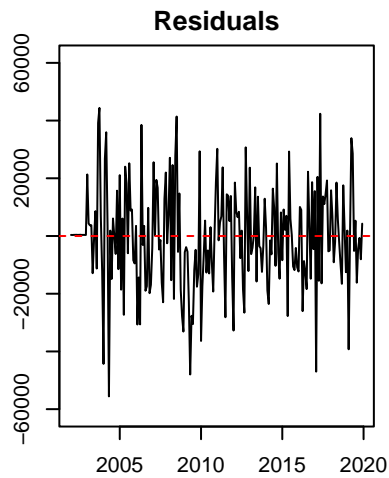
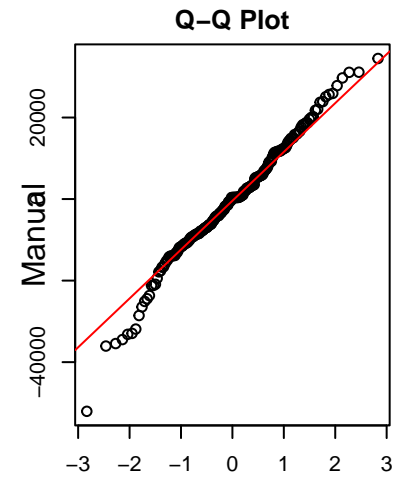
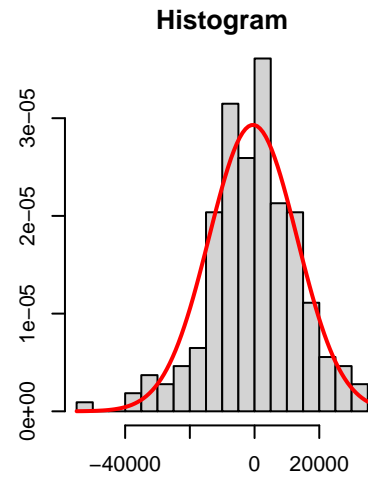
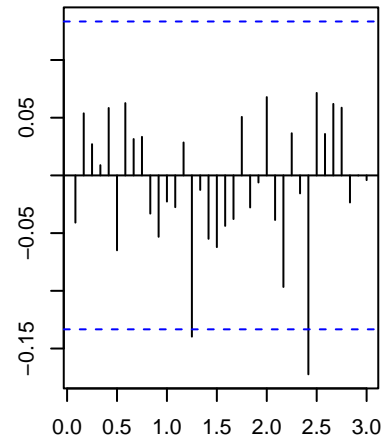
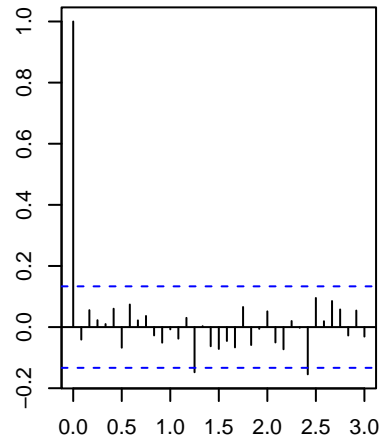
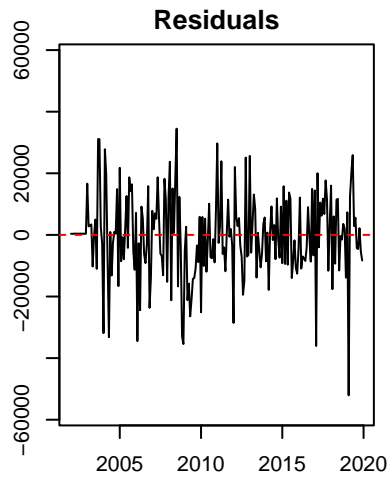


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,3)×(2,1,1)_1
Ljung-Box Tests:
lag=2: X2=3.55, p=0.17, PASS
lag=12: X2=15.00, p=0.241, PASS
lag=16: X2=16.40, p=0.426, PASS
Normality: W=0.993, p=0.443, PASS (normal)
CH test: X2=22.89, p=0.0287, FAIL (ARCH effect)
quality ratio: 0.053, PASS (no remaining seasonality)
CF plots and Ljung-Box tests show conflict in annual model

Auto model: Auto: SARIMA(2,1,0)×(0,1,2)_12
Ljung-Box Tests:

Enhanced Residual Diagnostics for Jurisdiction 20

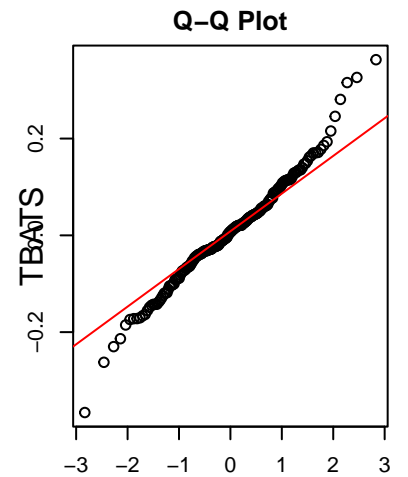
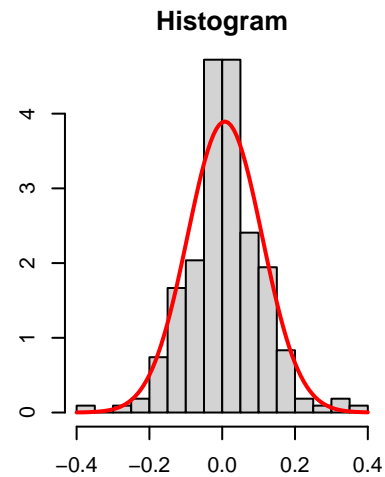
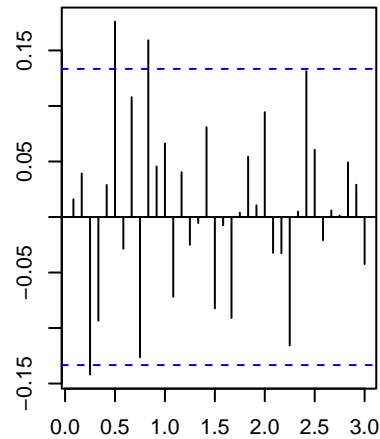
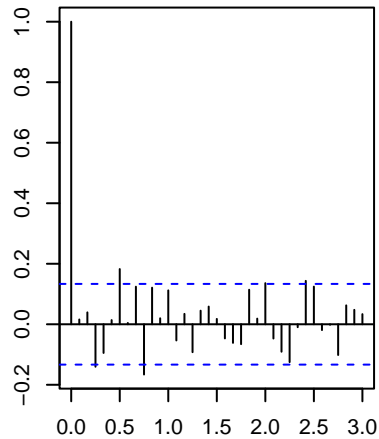
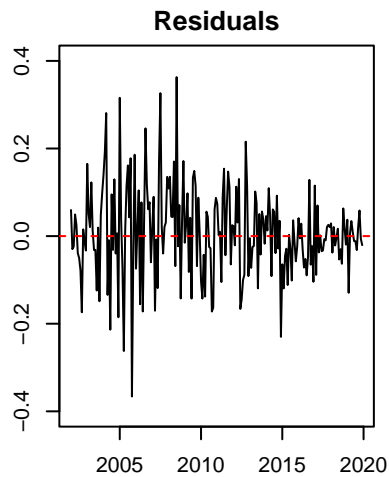
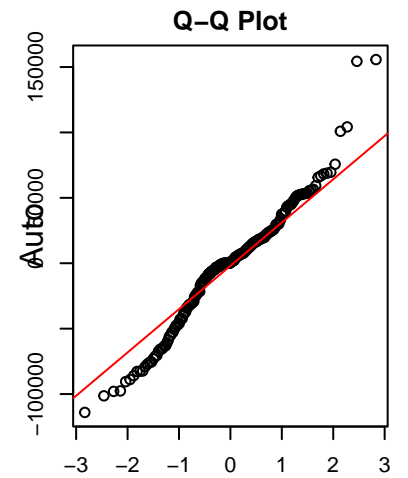
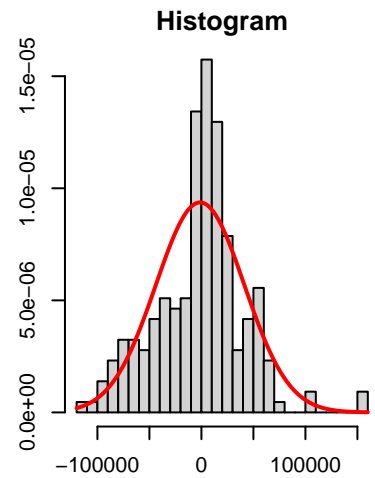
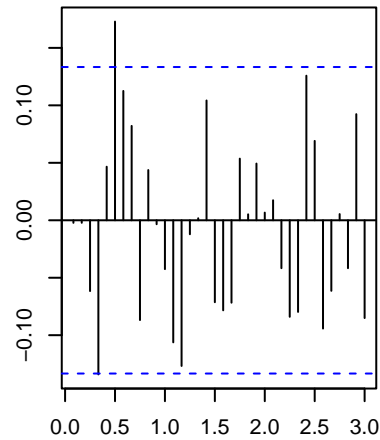
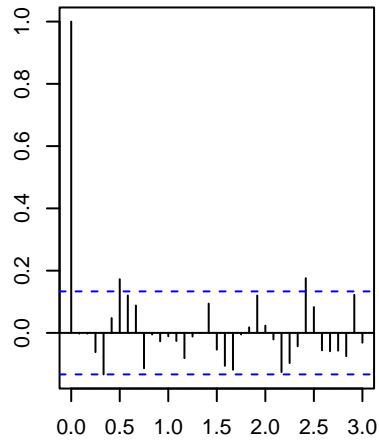
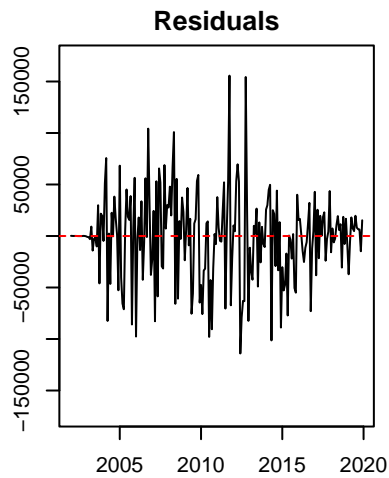
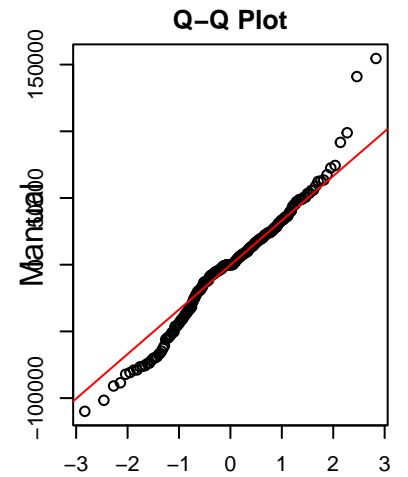
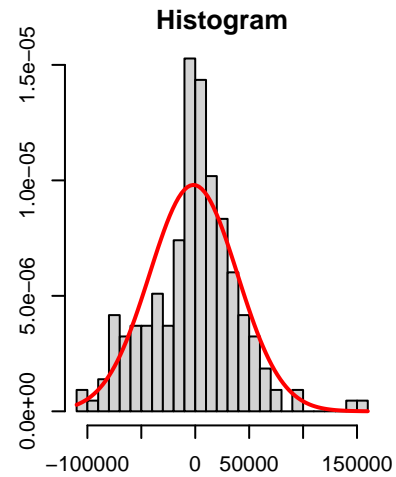
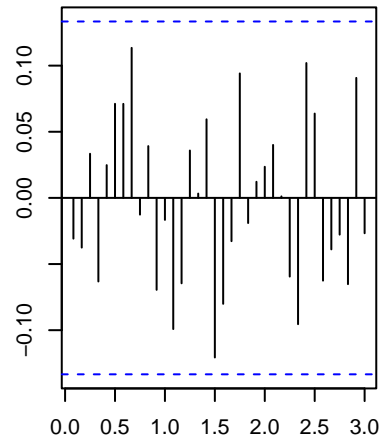
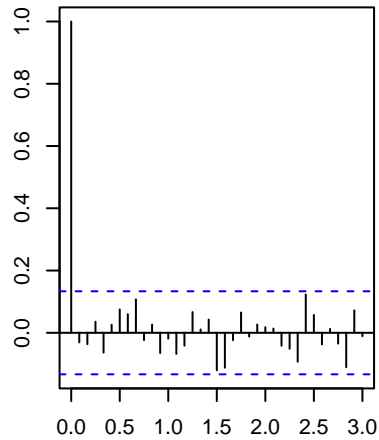
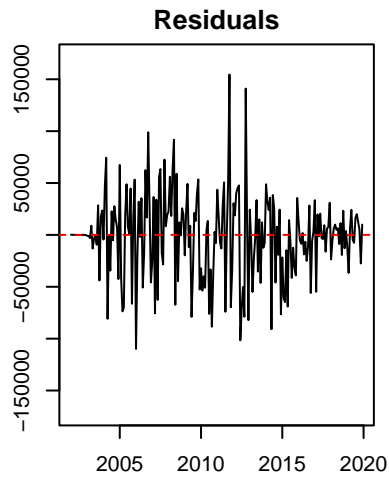


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(3,0,3)x(1,1,1)_1
Ljung-Box Tests:
lag=2: X2=4.81, p=0.0902, PASS
lag=12: X2=14.78, p=0.254, PASS
lag=16: X2=17.31, p=0.366, PASS
Normality: W=0.985, p=0.0263, FAIL (not normal)
ARCH test: X2=9.20, p=0.686, PASS (const. var)
Quality ratio: 0.060, PASS (no remaining seasonality)
CF plots and Ljung-Box tests show conflict in annual model

Auto model: Auto: SARIMA(4,0,0)x(1,1,0)_12
Ljung-Box Tests:

Enhanced Residual Diagnostics for Jurisdiction Z1

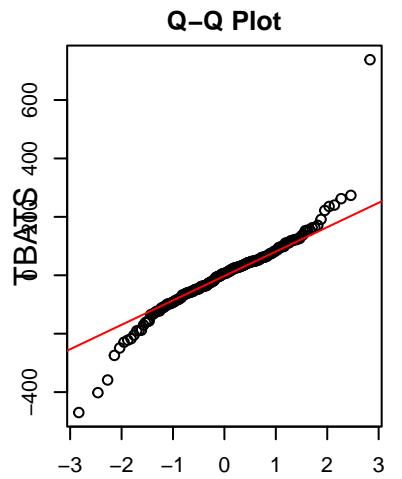
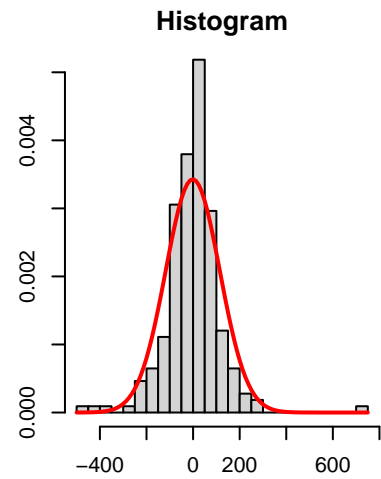
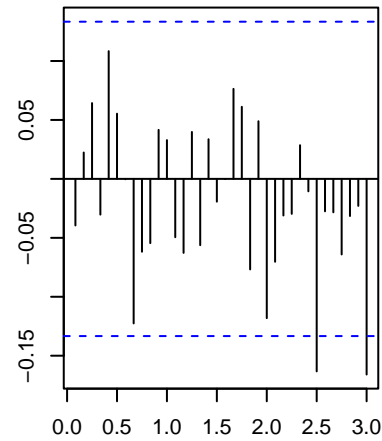
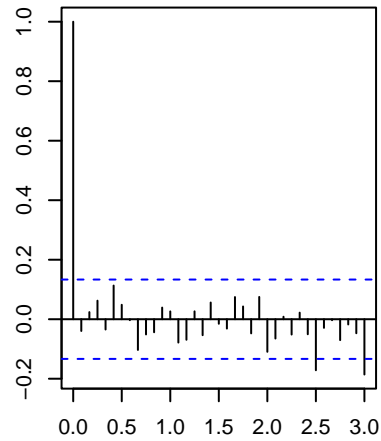
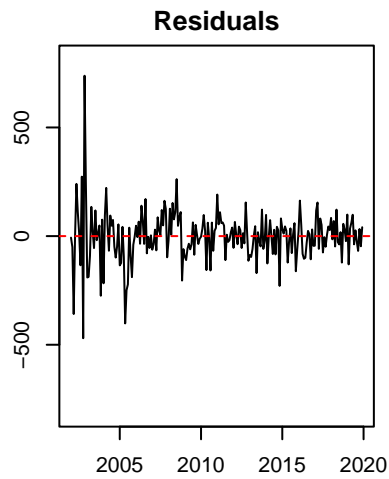
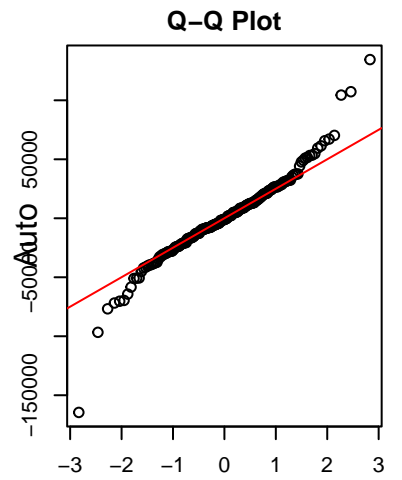
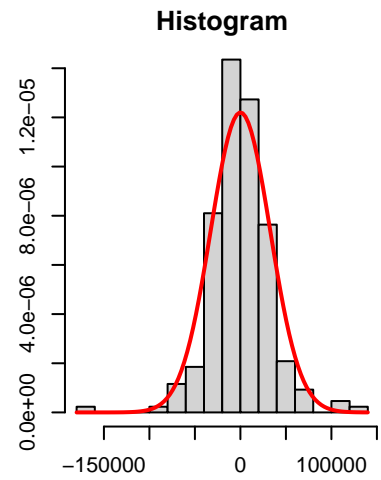
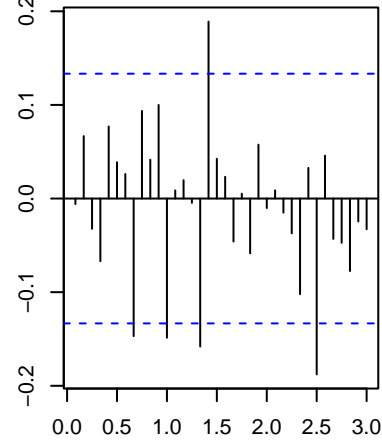
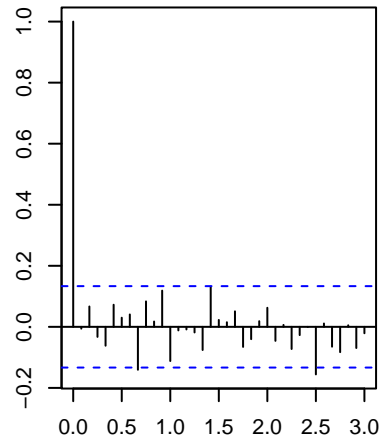
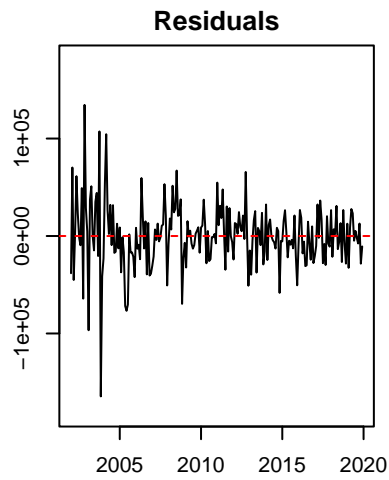
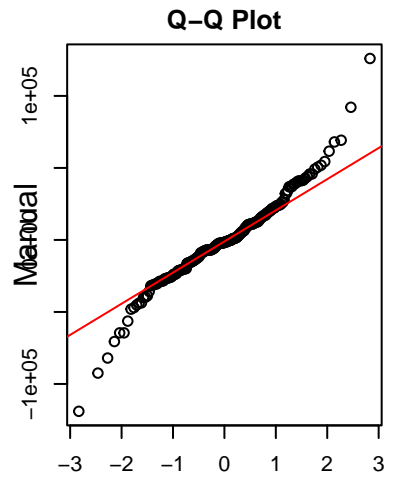
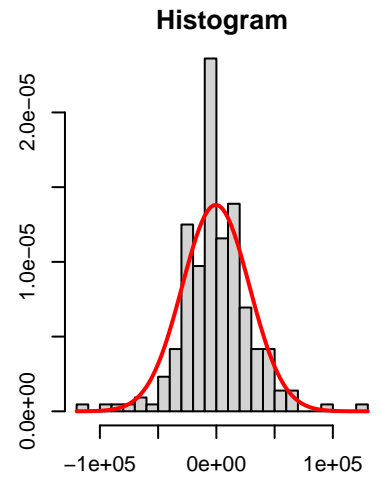
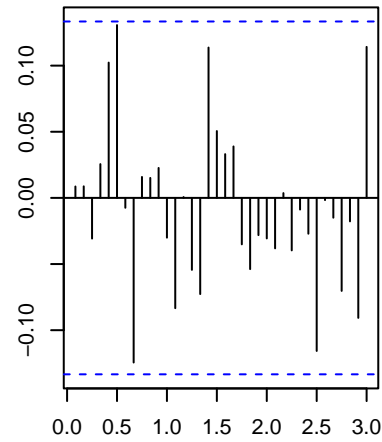
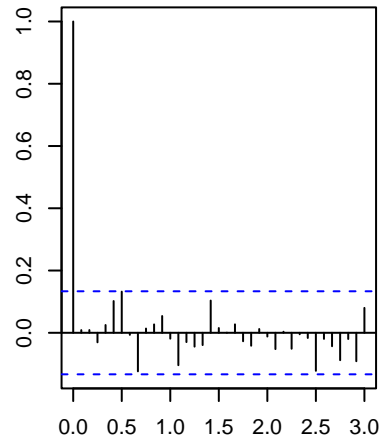
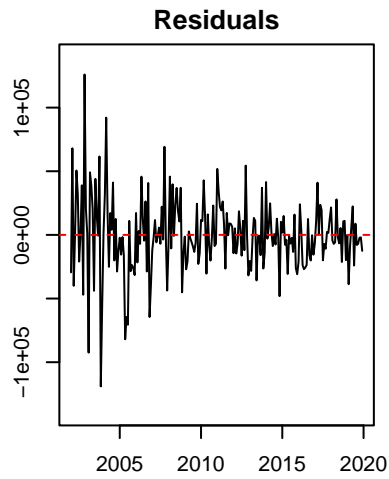


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,3)×(0,1,1)_1
Ljung-Box Tests:
lag=4: X2=6.81, p=0.146, PASS
lag=14: X2=17.43, p=0.234, PASS
lag=18: X2=18.74, p=0.408, PASS
normality: W=0.975, p=0.000776, FAIL (not normal)
H test: X2=54.39, p=2.33e-07, FAIL (ARCH effect)
quality ratio: 0.033, PASS (no remaining seasonality)

Auto model: Auto: SARIMA(0,1,2)×(0,1,1)_12
Ljung-Box Tests:
lag=7: X2=19.92, p=0.00575, FAIL

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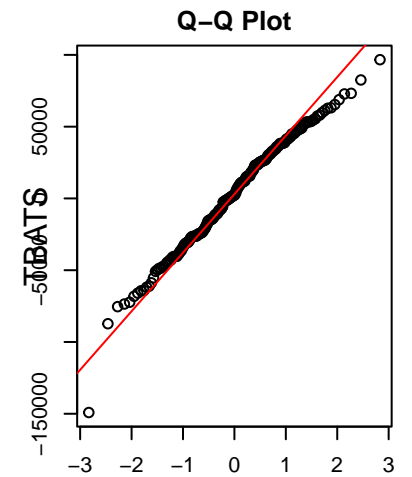
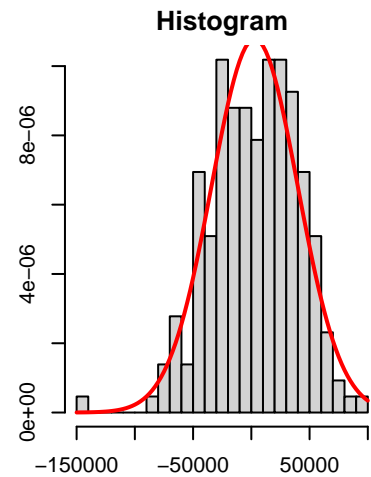
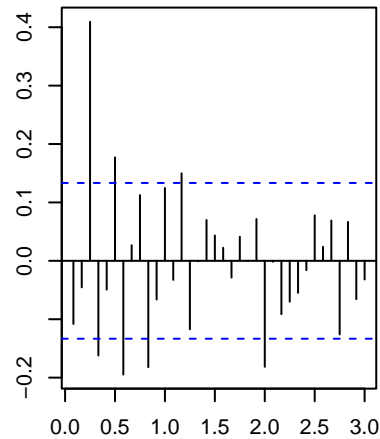
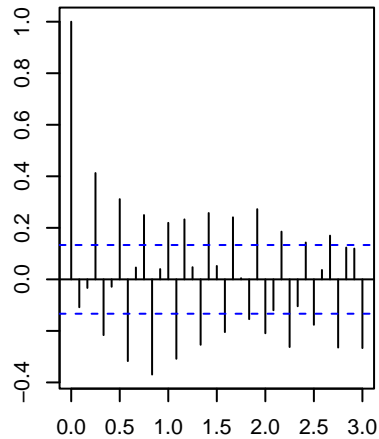
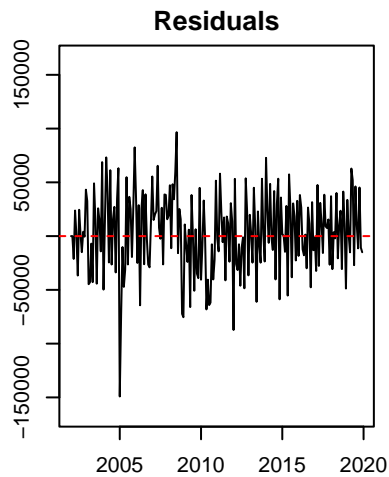
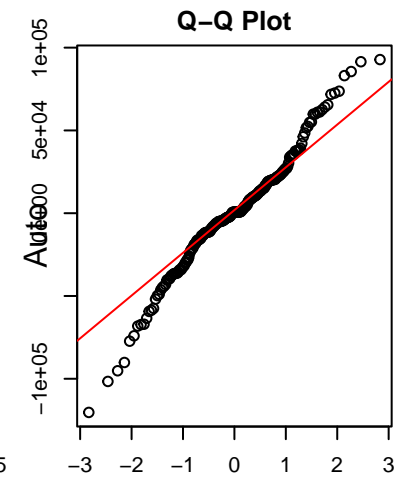
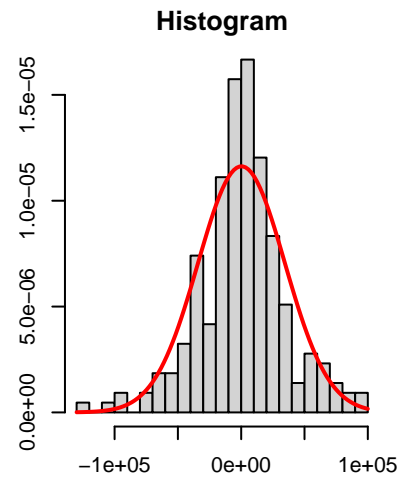
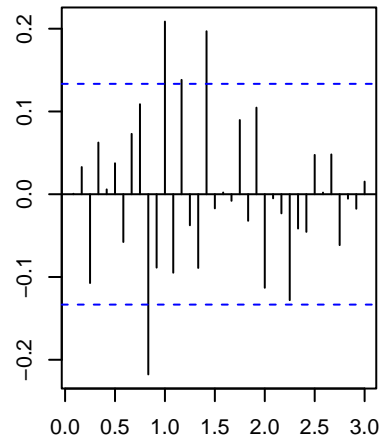
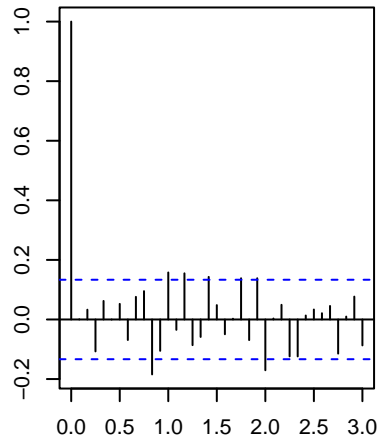
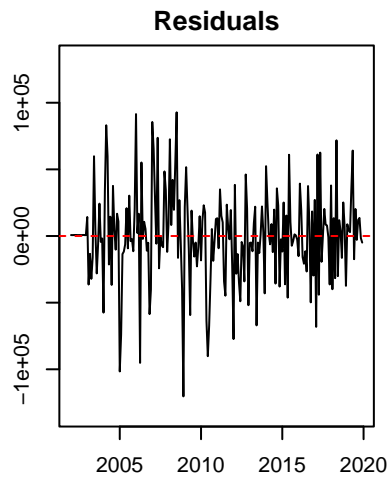
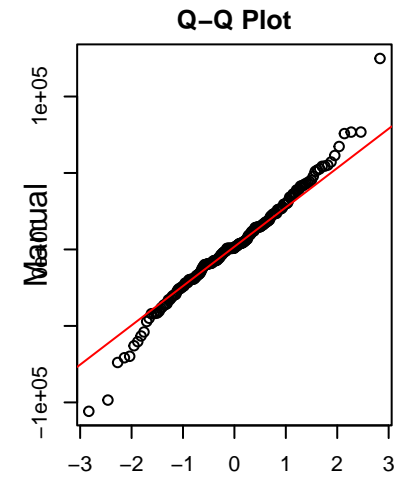
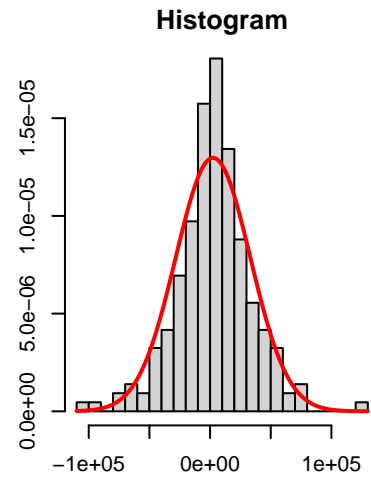
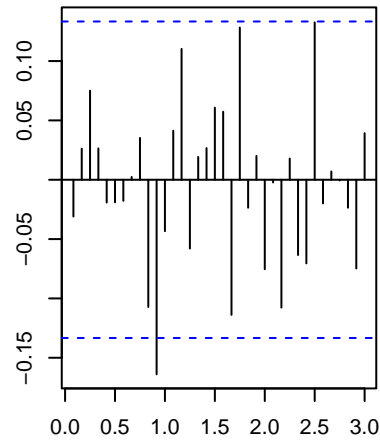
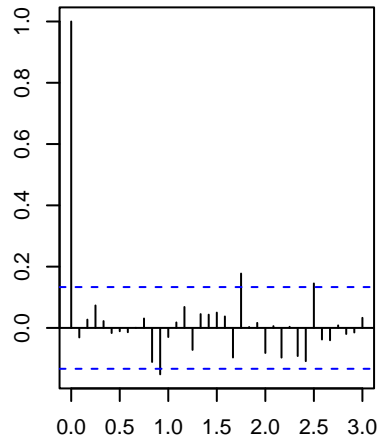
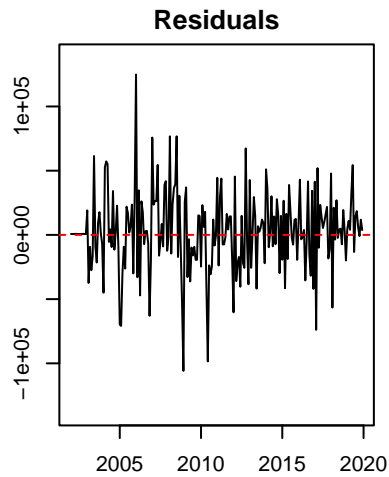


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(3,0,2)×(3,0,3)_1
Ljung-Box Tests:
lag=8: X2=17.37, p=0.0265, FAIL
lag=12: X2=18.04, p=0.115, PASS
ormality: W=0.959, p=6.5e-06, FAIL (not norm
H test: X2=75.96, p=2.41e-11, FAIL (ARCH eff
sonality ratio: 0.146, FAIL (seasonality rem
CF plots and Ljung-Box tests show conflictin

Auto model: Auto: SARIMA(2,0,2)×(1,0,0)_12
Ljung-Box Tests:
laq=4: X2=9.95, p=0.0413, FAIL

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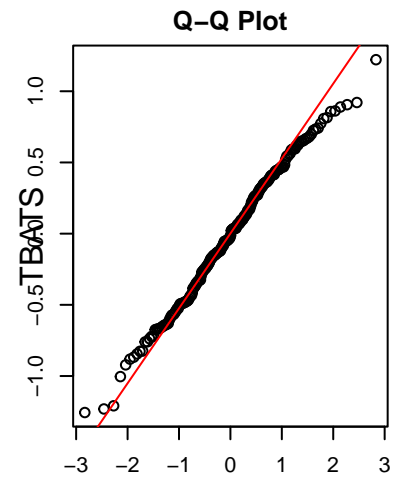
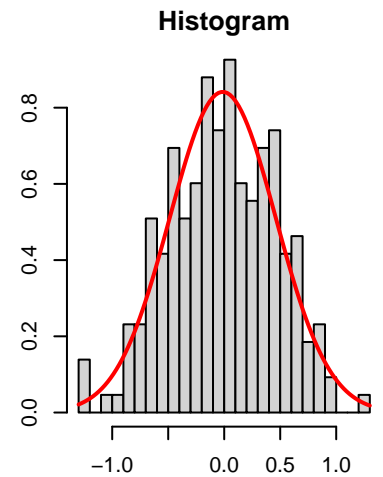
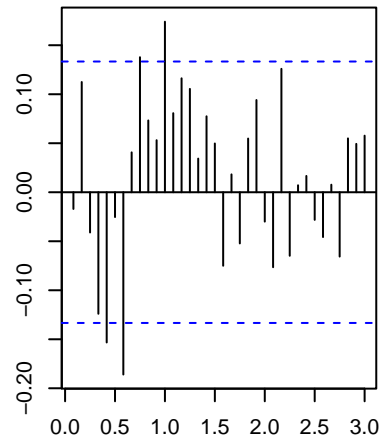
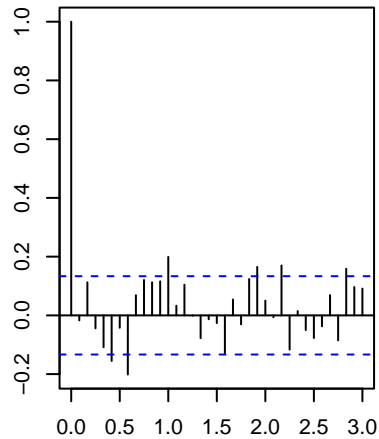
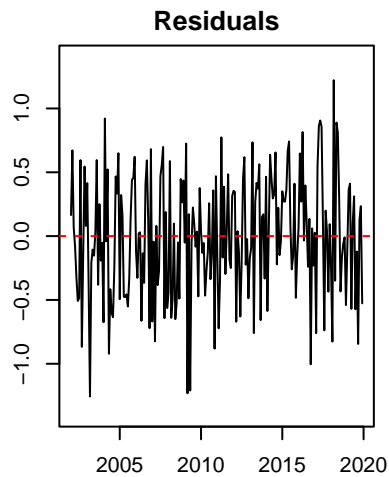
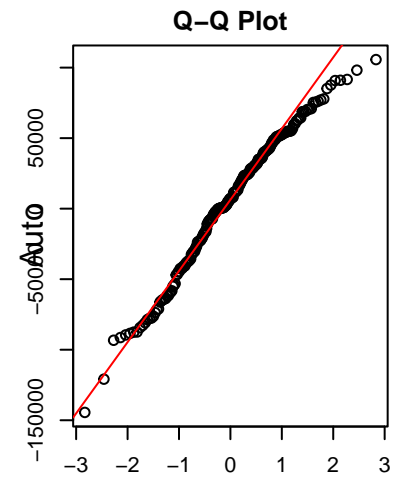
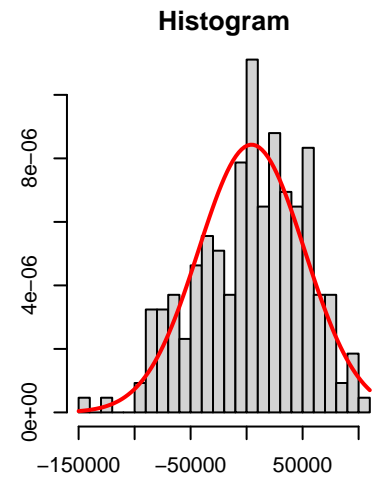
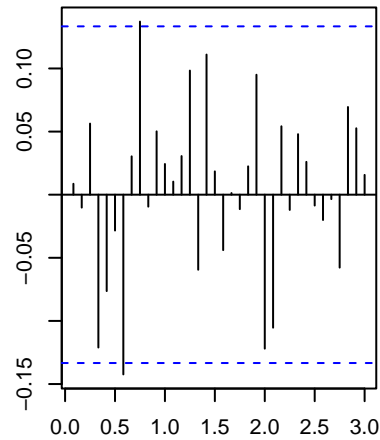
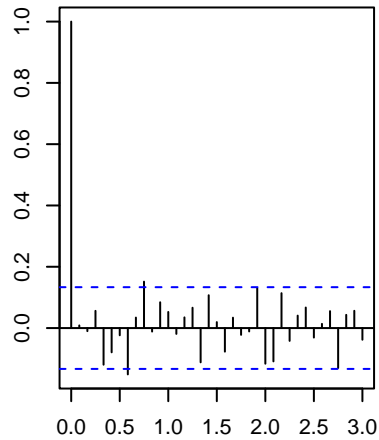
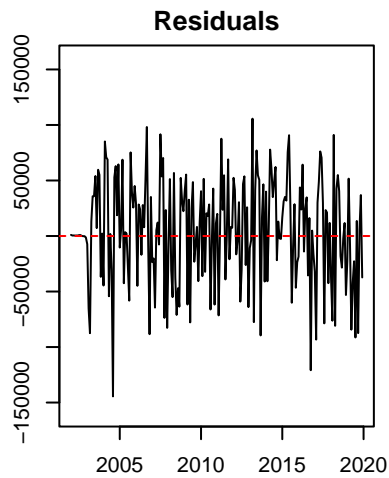
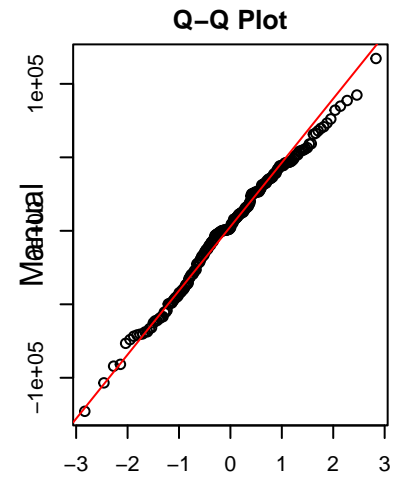
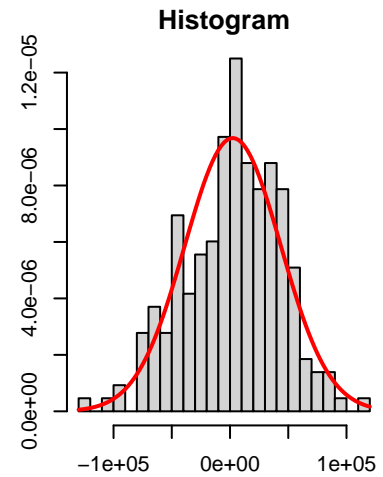
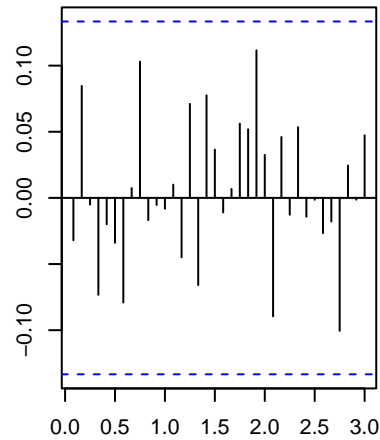
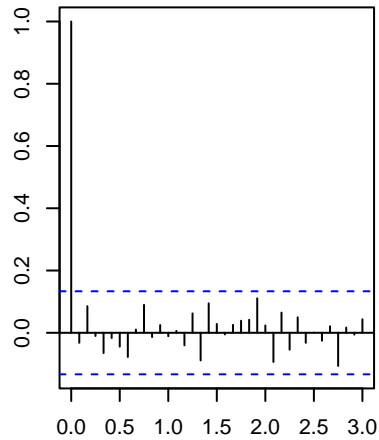
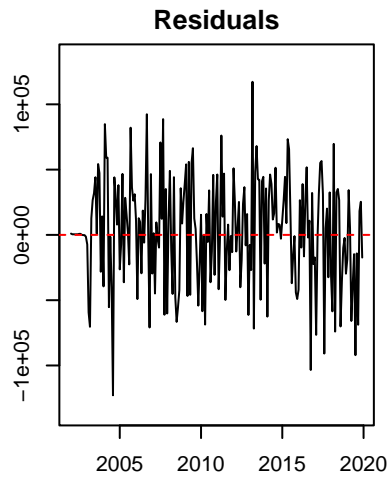


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(3,0,3)x(0,1,2)_1
Ljung-Box Tests:
lag=2: X2=4.84, p=0.0889, PASS
lag=12: X2=16.76, p=0.159, PASS
lag=16: X2=26.06, p=0.0532, PASS
ormality: W=0.981, p=0.00551, FAIL (not norm
CH test: X2=23.17, p=0.0263, FAIL (ARCH effe
ality ratio: 0.067, PASS (no remaining seas
CF plots and Ljung-Box tests show conflictin

Auto model: Auto: SARIMA(4,0,0)x(0,1,1)_12
Ljung-Box Tests:

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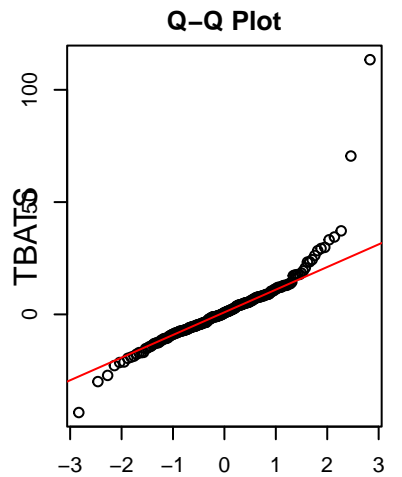
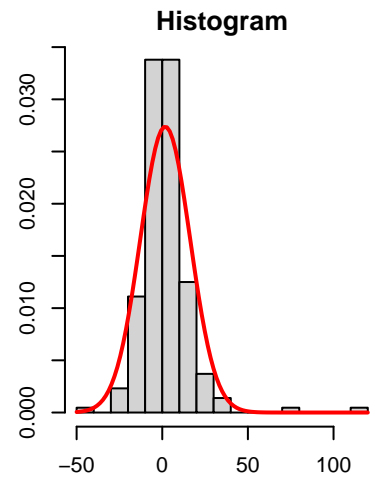
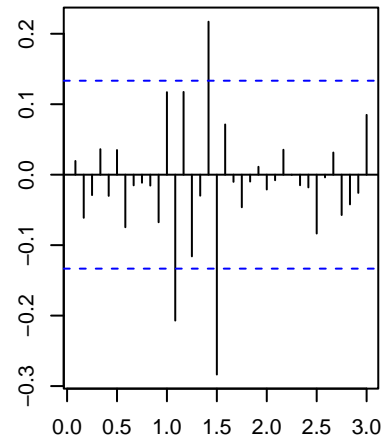
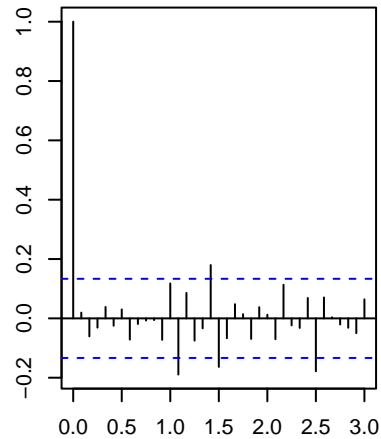
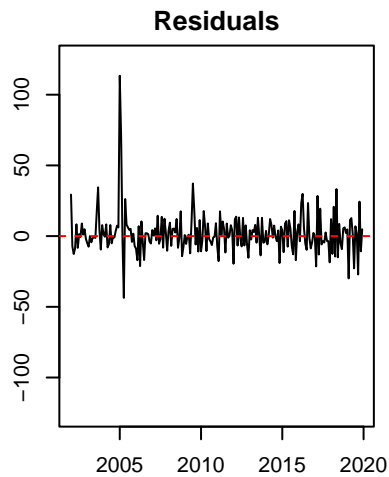
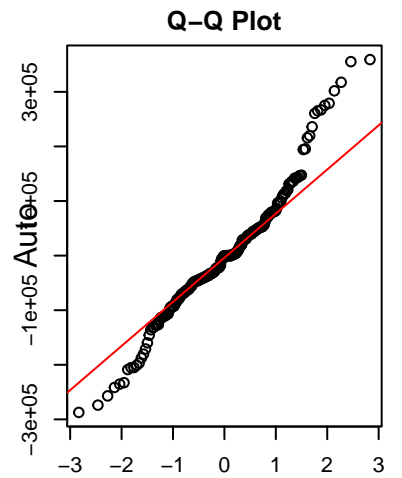
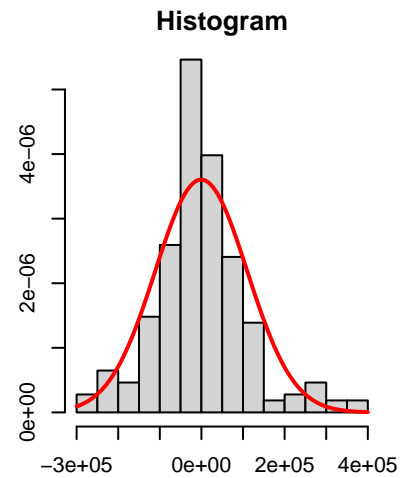
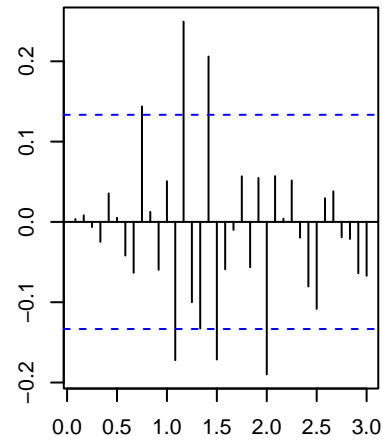
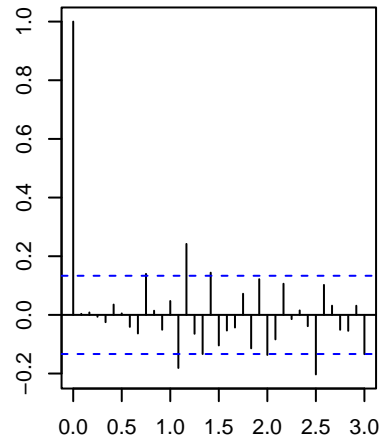
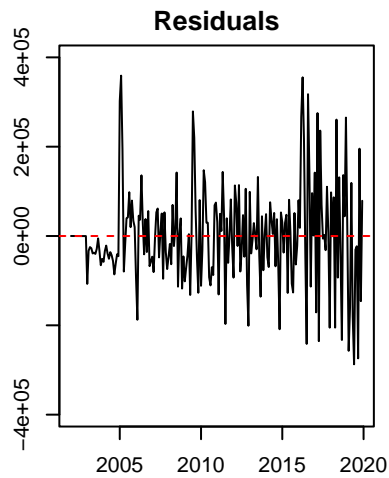
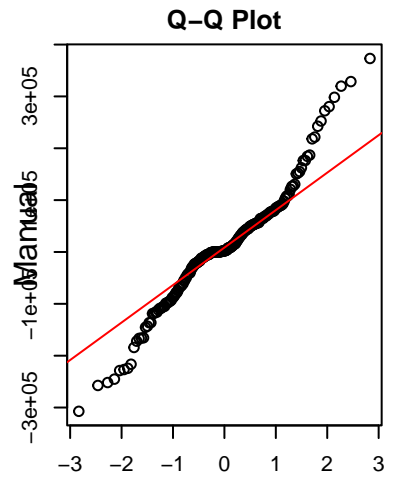
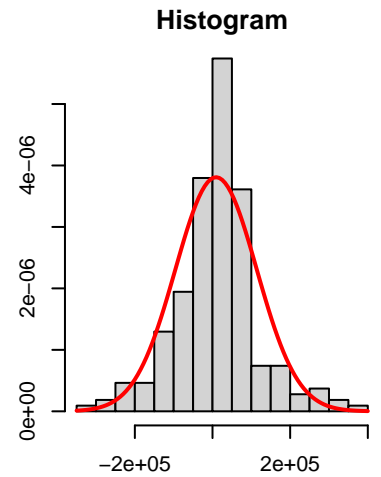
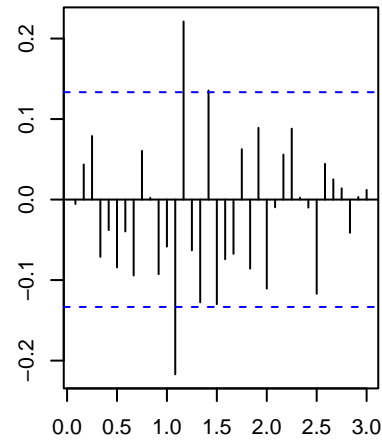
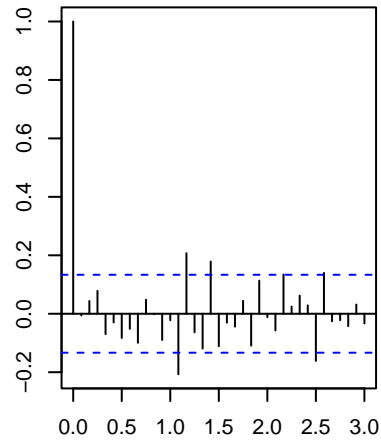
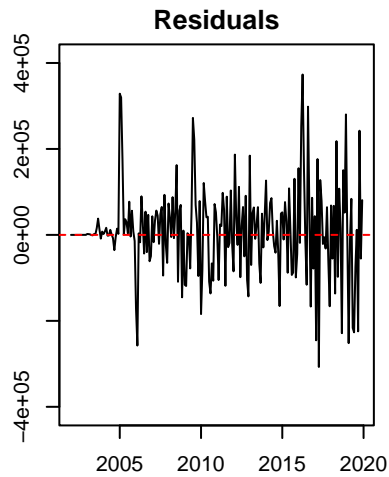


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,3)×(2,1,3)_1
Ljung-Box Tests:
lag=10: X2=12.37, p=0.261, PASS
lag=14: X2=16.28, p=0.296, PASS
Normality: W=0.992, p=0.301, PASS (normal)
ARCH test: X2=7.25, p=0.841, PASS (const. var)
quality ratio: 0.069, PASS (no remaining seasonality)

Auto model: Auto: SARIMA(0,1,3)×(0,1,1)_12
Ljung-Box Tests:
lag=6: X2=16.11, p=0.0132, FAIL
lag=16: X2=27.23, p=0.039, FAIL

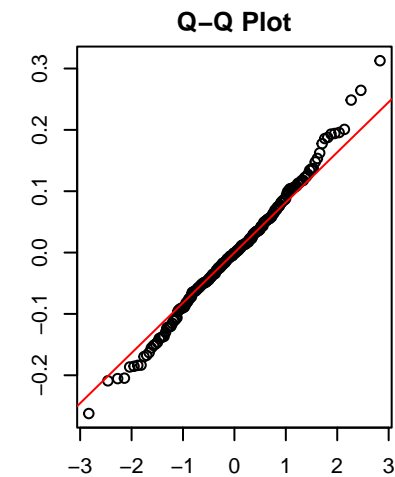
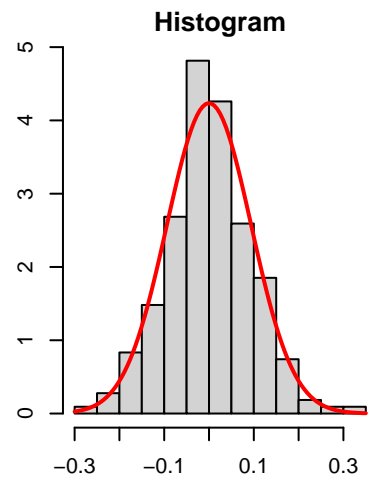
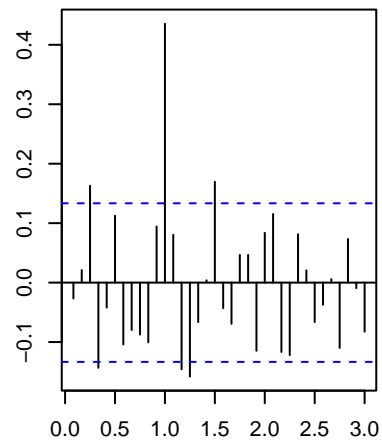
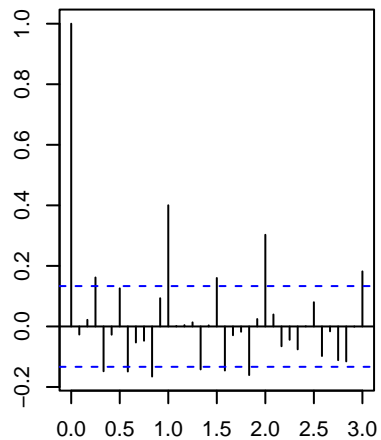
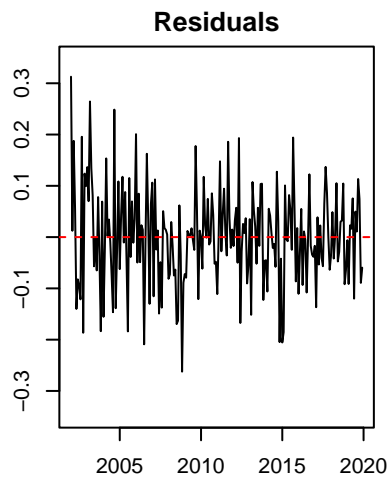
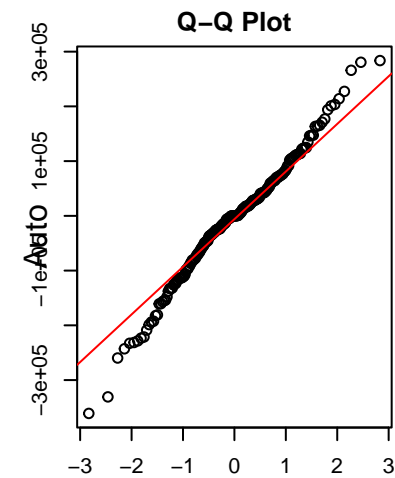
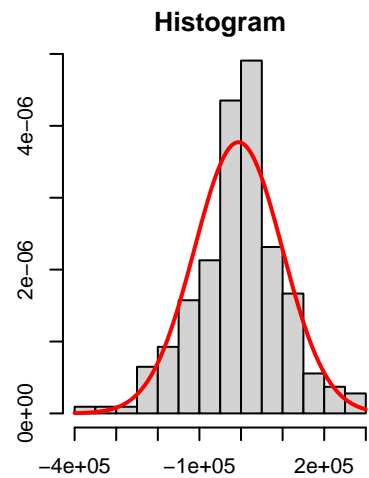
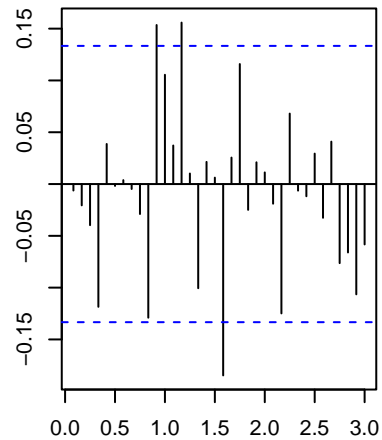
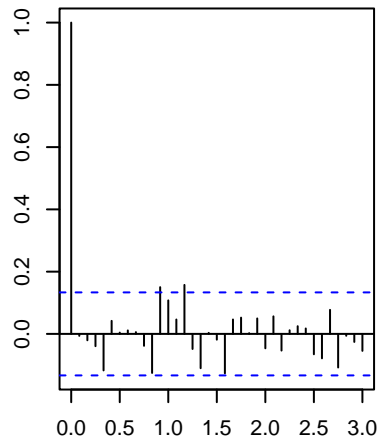
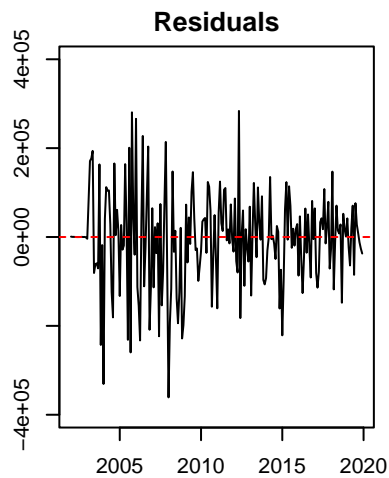
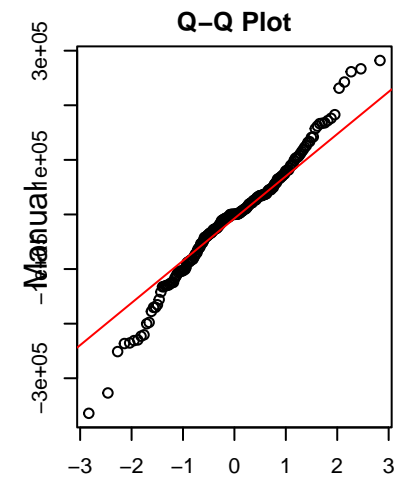
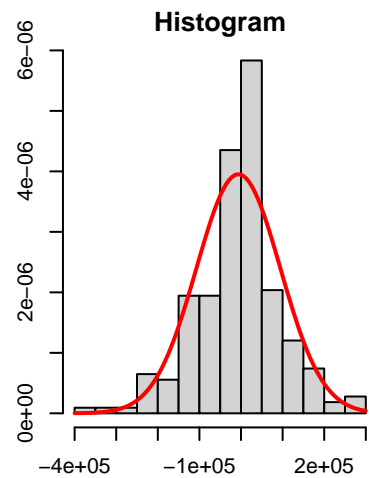
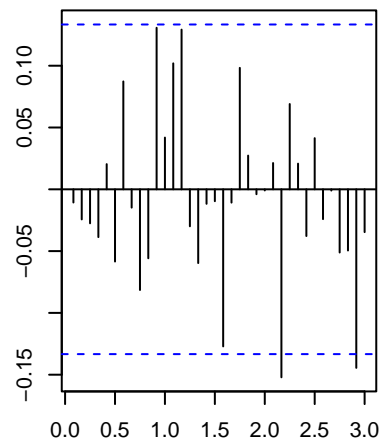
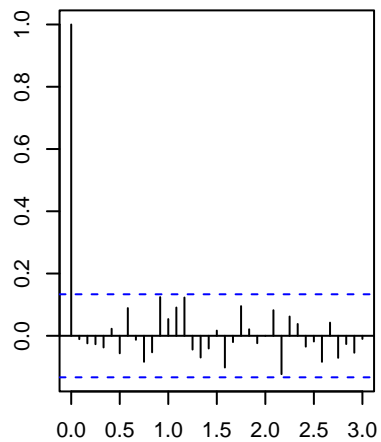
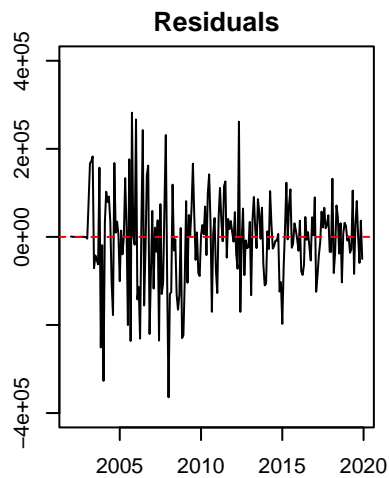
Enhanced Residual Diagnostics for Jurisdiction 40



MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,0,0)x(3,1,2)_1
Ljung-Box Tests:
lag=3: X2=7.97, p=0.0466, FAIL
lag=13: X2=45.38, p=1.81e-05, FAIL
lag=17: X2=51.89, p=2.14e-05, FAIL
normality: W=0.959, p=7.02e-06, FAIL (not normal)
H test: X2=49.47, p=1.73e-06, FAIL (ARCH effect)
quality ratio: 0.087, PASS (no remaining seasonality)

Auto model: Auto: SARIMA(4,0,0)x(0,1,1)_12
Ljung-Box Tests:
lag=4: X2=6.21, p=0.184, PASS



Enhanced Residual Diagnostics for Jurisdiction 10001

Diag Error

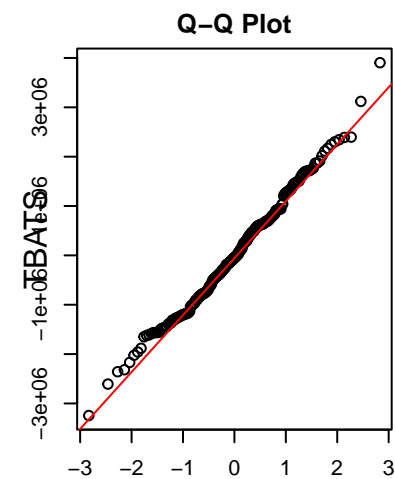
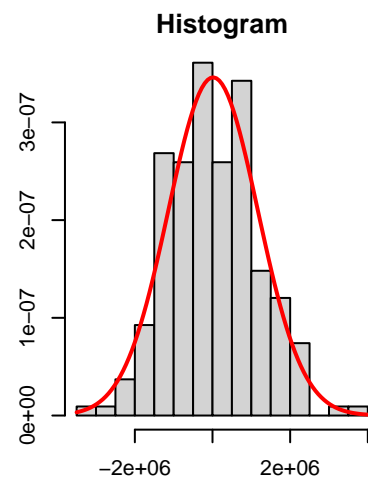
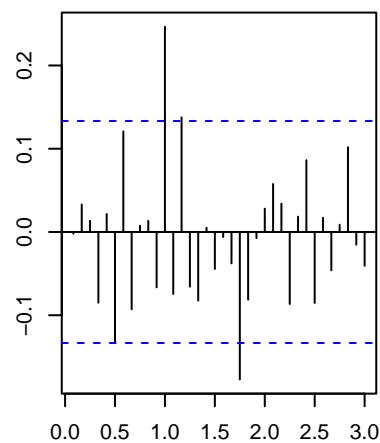
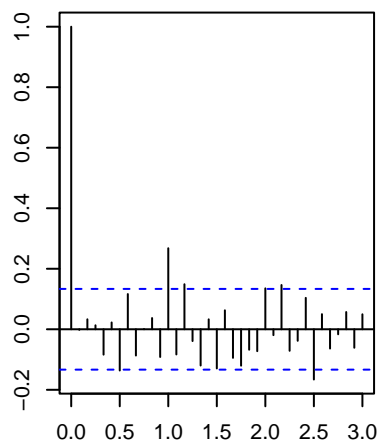
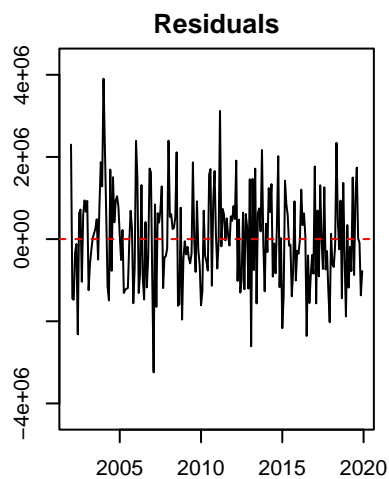
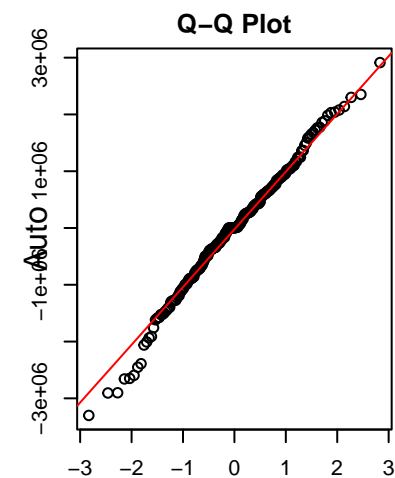
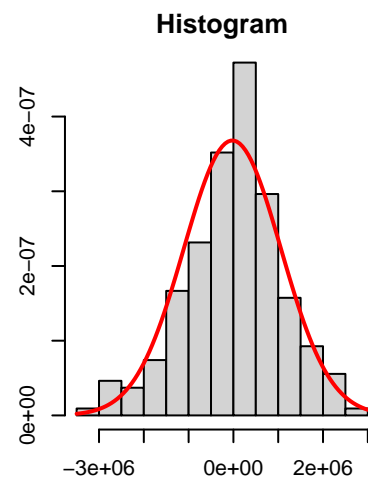
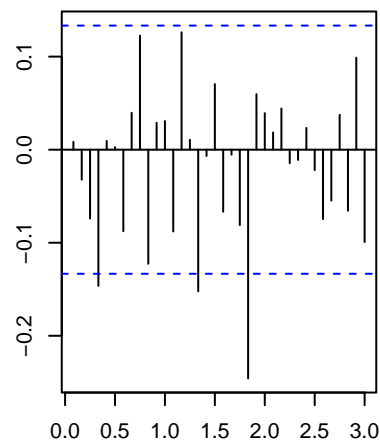
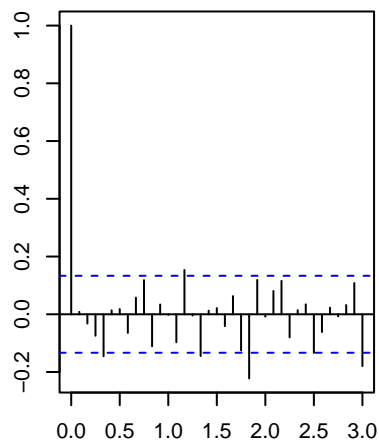
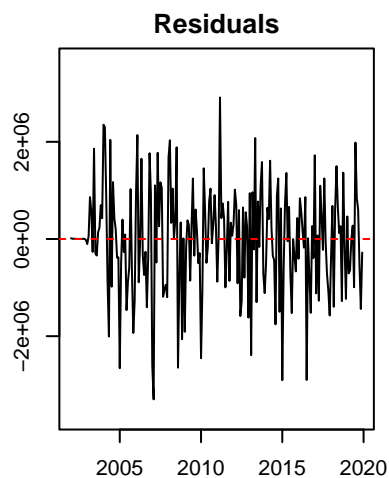
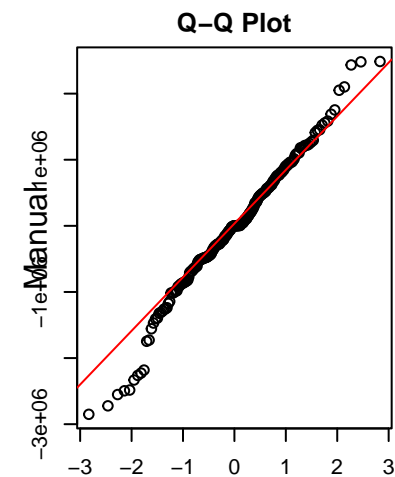
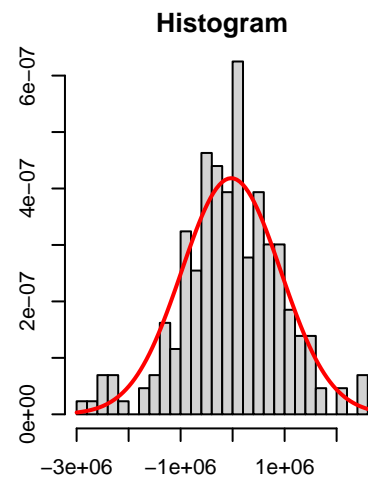
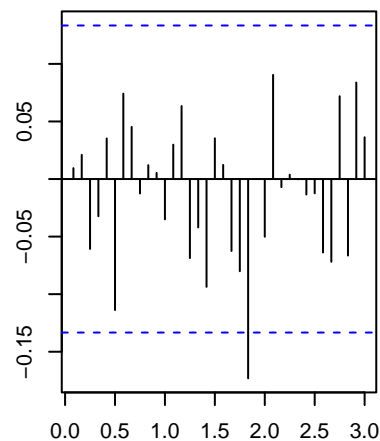
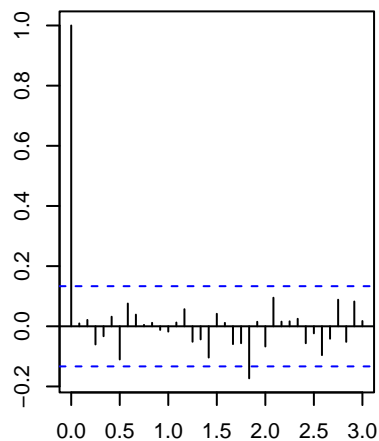
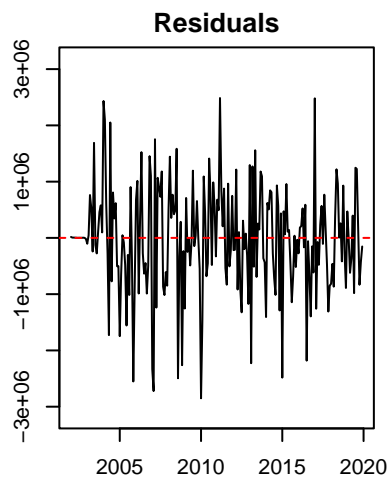
TBATS

```
MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,3)×(1,1,1)_1
  Ljung-Box Tests:
    lag=3: X2=5.50, p=0.139, PASS
    lag=13: X2=19.78, p=0.101, PASS
    lag=17: X2=22.22, p=0.176, PASS
  normality: W=0.976, p=0.00109, FAIL (not norm
  H test: X2=50.52, p=1.13e-06, FAIL (ARCH eff
  sonality ratio: 0.106, FAIL (seasonality rem

Auto model: Auto: SARIMA(2,1,0)×(0,1,1)_12
  Ljung-Box Tests:
    lag=7: X2=7.87, p=0.344, PASS
```

Enhanced Residual Diagnostics for Jurisdiction 10003

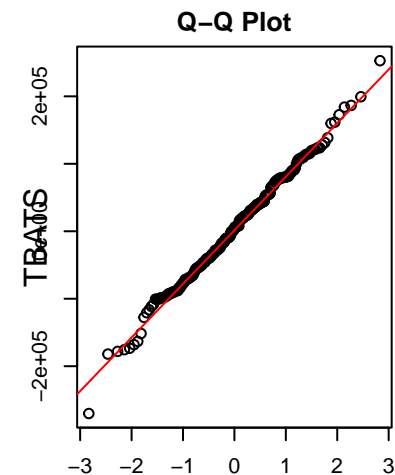
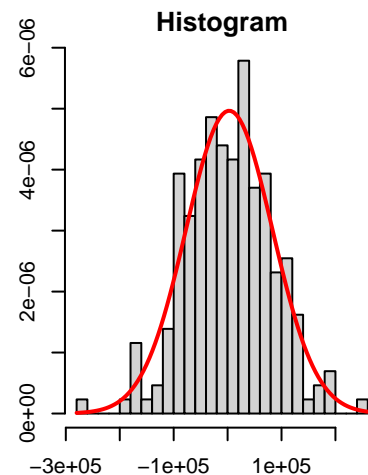
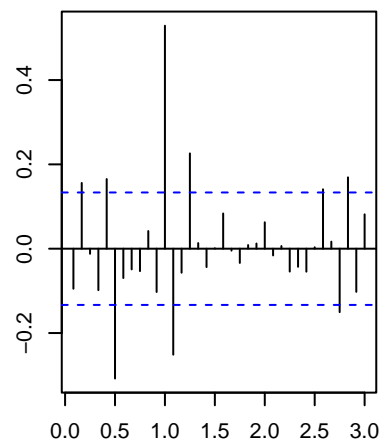
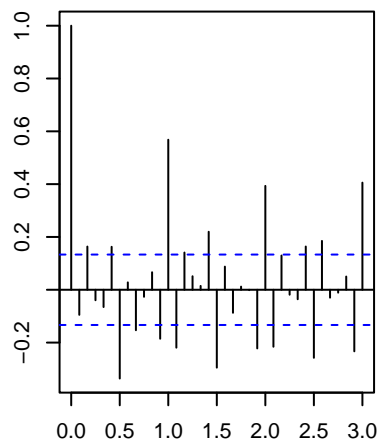
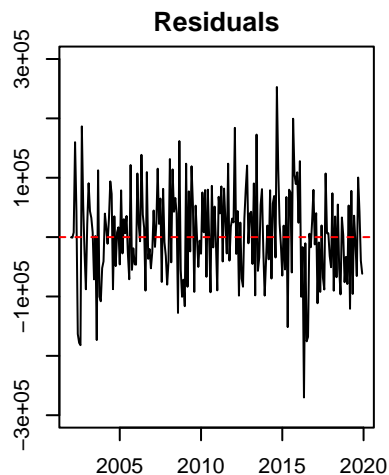
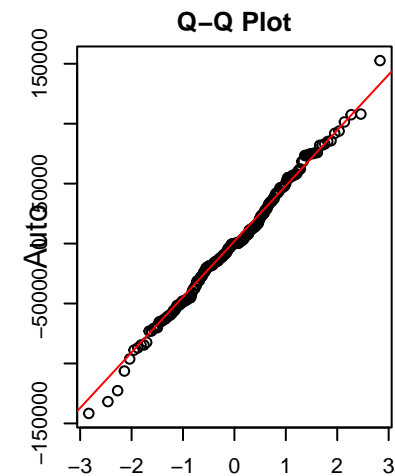
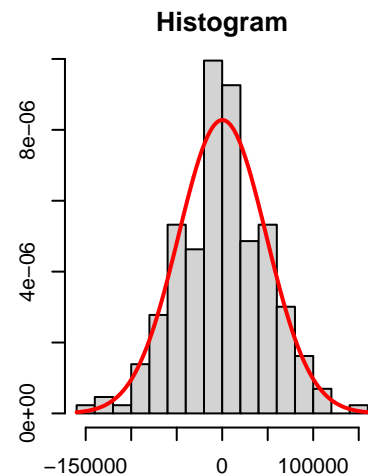
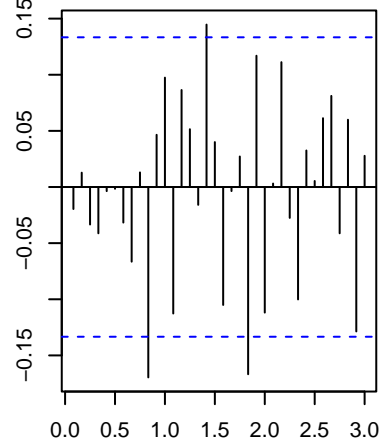
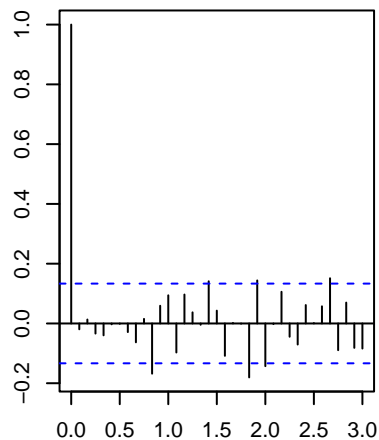
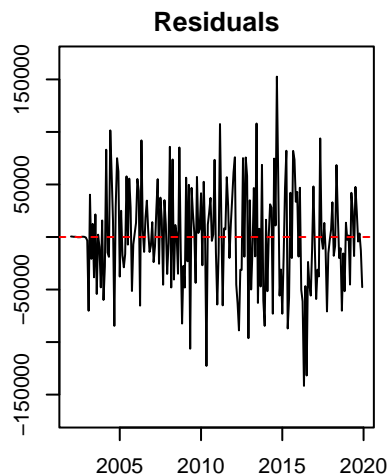
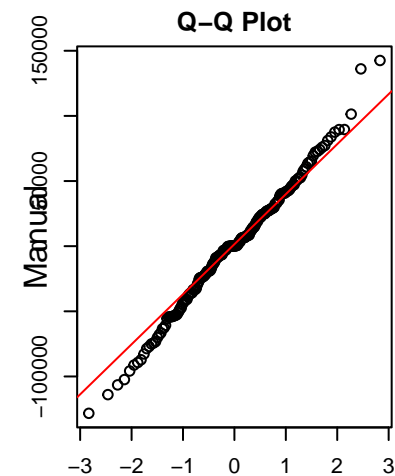
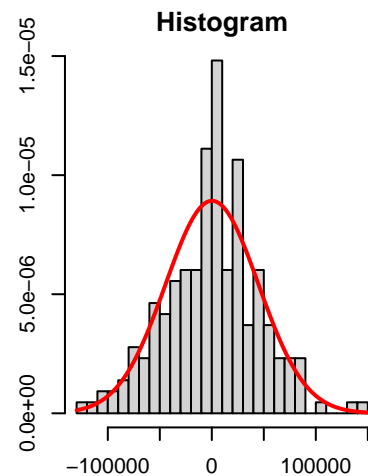
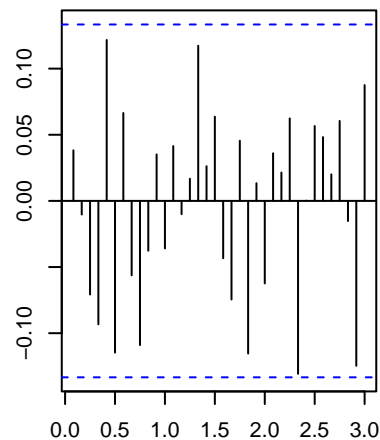
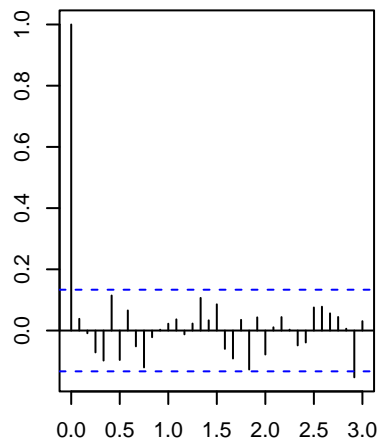
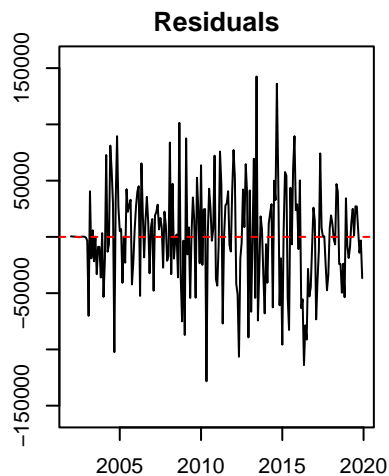


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,3)×(1,1,3)_1
Ljung-Box Tests:
lag=1: X2=5.78, p=0.0162, FAIL
lag=11: X2=11.57, p=0.397, PASS
lag=15: X2=20.75, p=0.145, PASS
Normality: W=0.985, p=0.0194, FAIL (not normal)
RCH test: X2=11.38, p=0.497, PASS (const. var)
Quality ratio: 0.068, PASS (no remaining seasonality)

Auto model: Auto: SARIMA(2,1,0)×(0,1,2)_12
Ljung-Box Tests:
lag=6: X2=13.97, p=0.03, FAIL

Enhanced Residual Diagnostics for Jurisdiction 10008

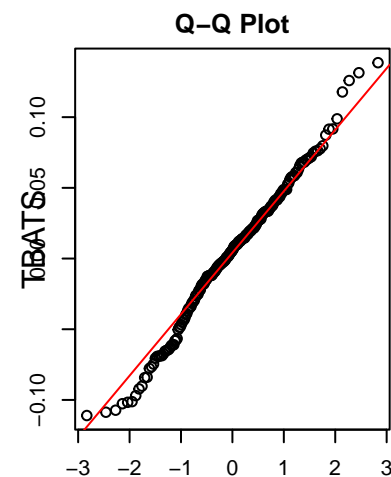
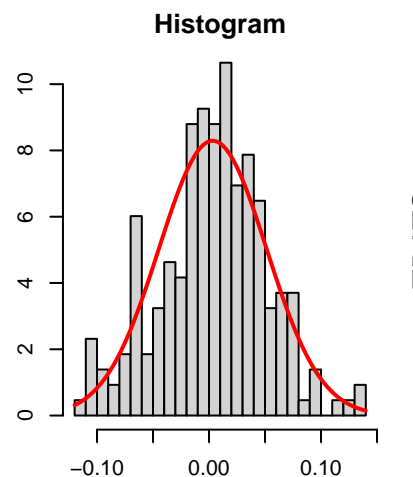
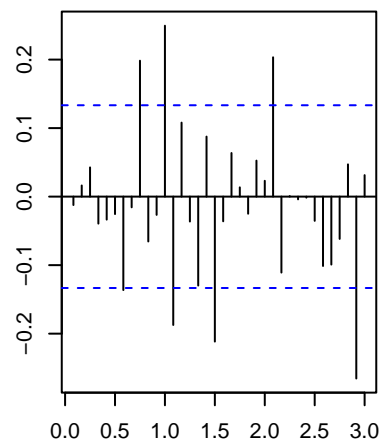
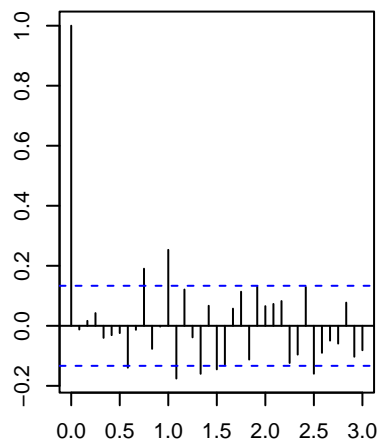
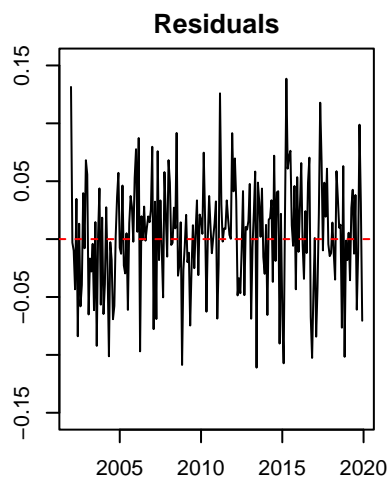
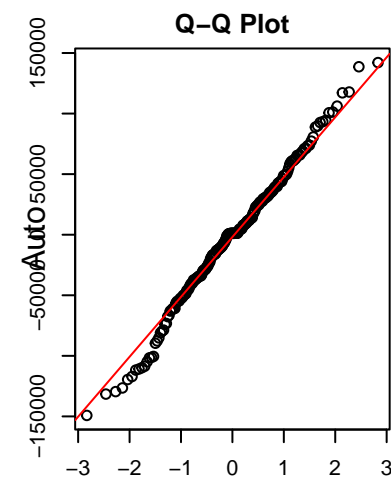
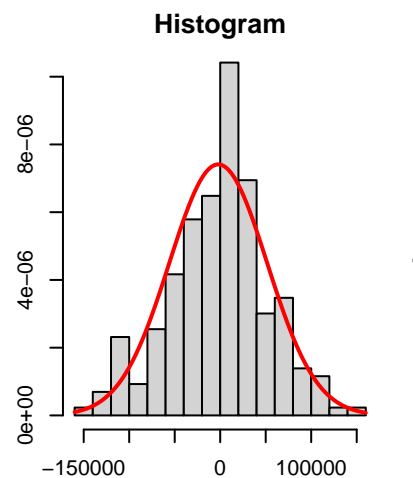
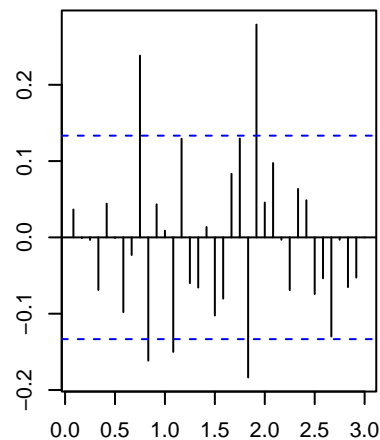
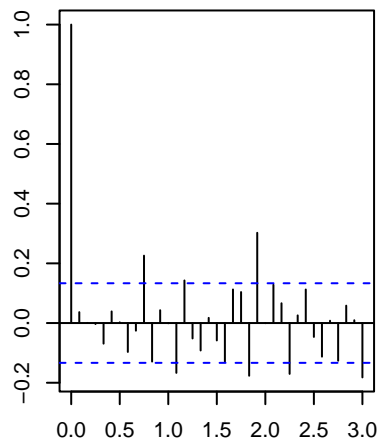
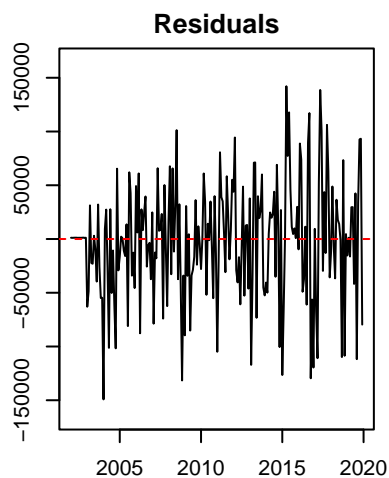
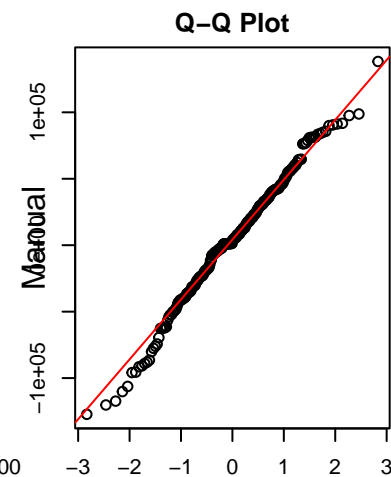
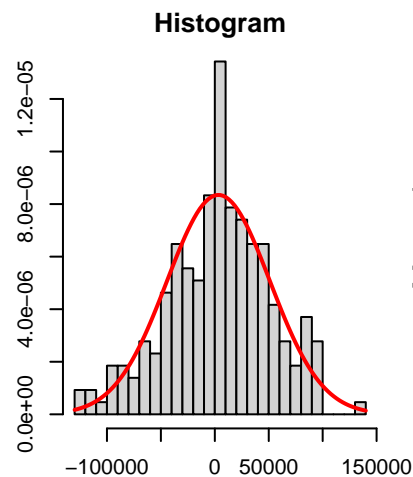
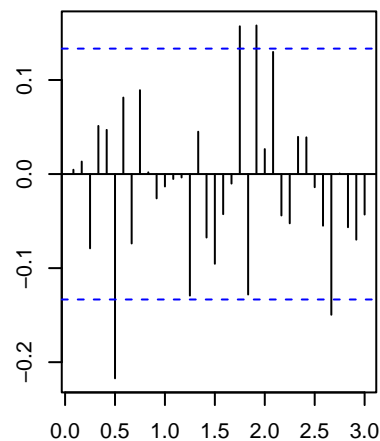
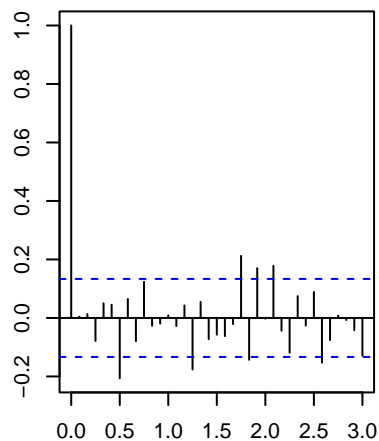
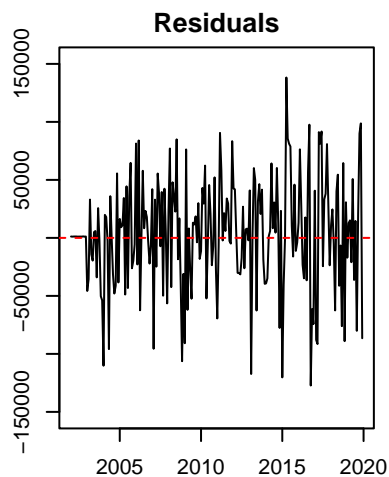


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,3)×(0,1,1)_1
Ljung-Box Tests:
lag=4: X2=13.57, p=0.00878, FAIL
lag=14: X2=21.69, p=0.0852, PASS
lag=18: X2=27.88, p=0.064, PASS
Normality: W=0.993, p=0.404, PASS (normal)
RCH test: X2=18.30, p=0.107, PASS (const. va
ality ratio: 0.034, PASS (no remaining seas

Auto model: Auto: SARIMA(4,1,0)×(0,1,1)_12
Ljung-Box Tests:
laq=5: X2=8.33, p=0.139, PASS

Enhanced Residual Diagnostics for Jurisdiction 10048

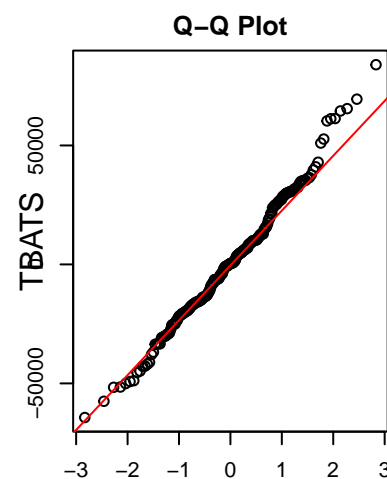
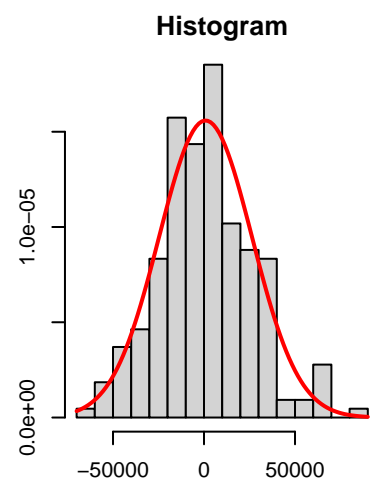
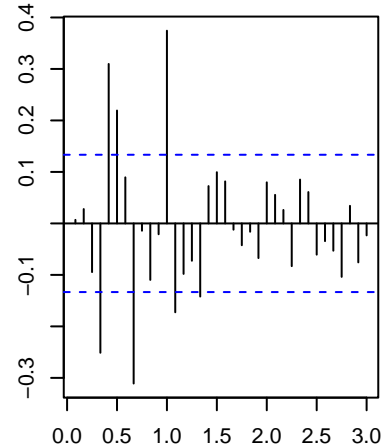
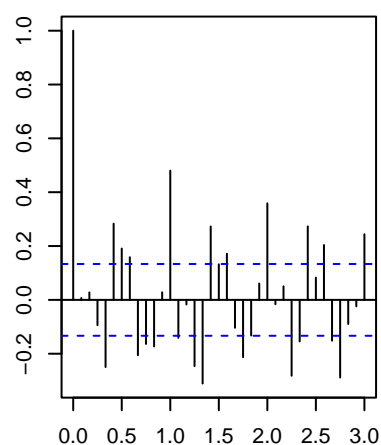
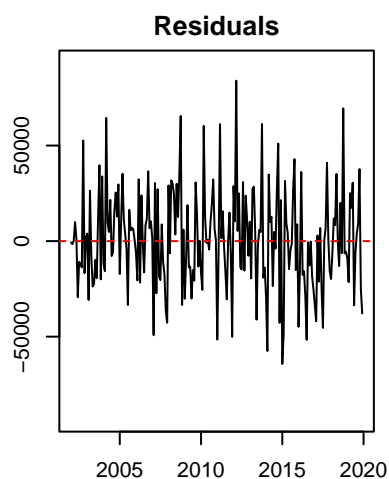
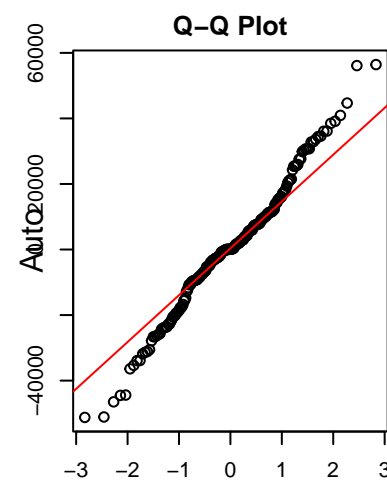
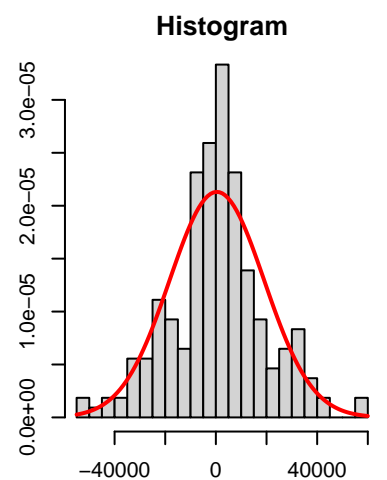
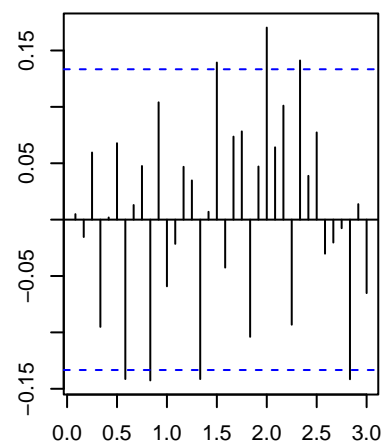
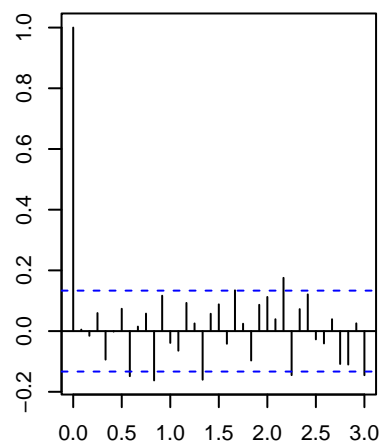
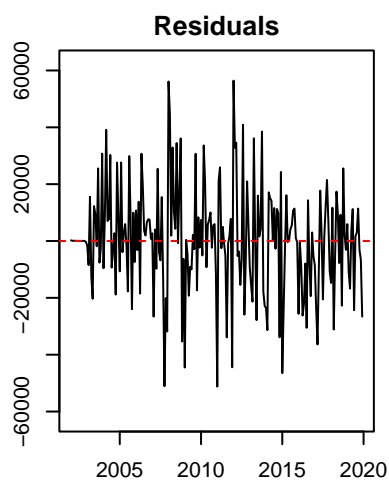
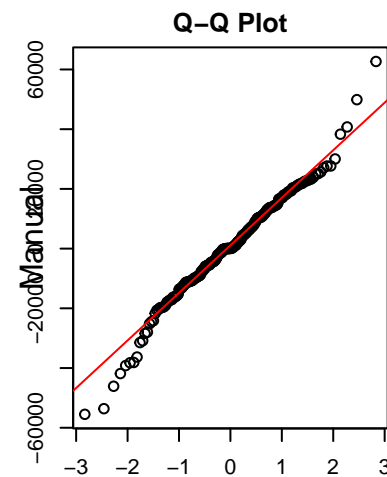
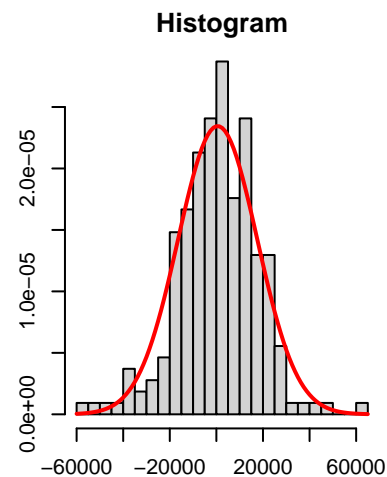
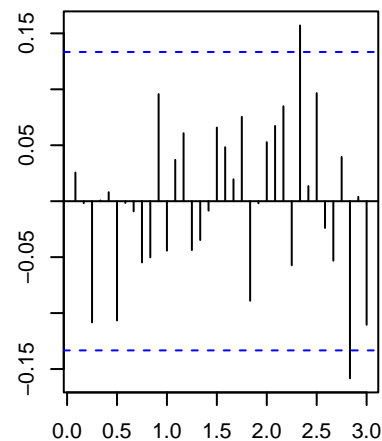
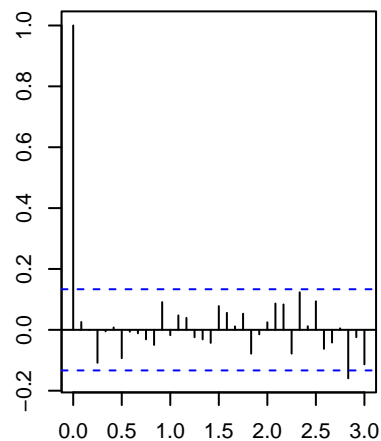
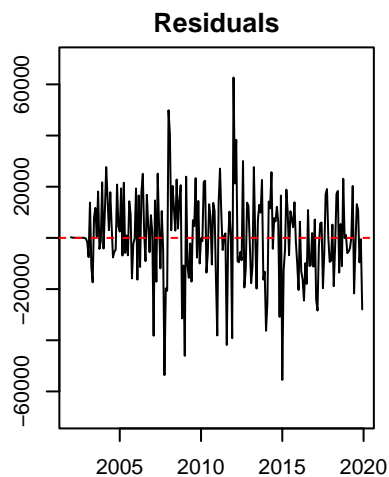


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(3,0,3)×(0,1,1)₁
Ljung-Box Tests:
lag=3: X2=17.98, p=0.000445, FAIL
lag=13: X2=29.72, p=0.00517, FAIL
lag=17: X2=52.62, p=1.64e-05, FAIL
Normality: W=0.991, p=0.215, PASS (normal)
BH test: X2=27.78, p=0.00595, FAIL (ARCH effect)
quality ratio: 0.062, PASS (no remaining seasonality)

Auto model: Auto: SARIMA(3,0,0)×(1,1,1)₁₂
Ljung-Box Tests:
lag=4: X2=19.36, p=0.000666, FAIL

Enhanced Residual Diagnostics for Jurisdiction 10030



MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,3)x(0,1,2)_1
Ljung-Box Tests:

lag=3: $\chi^2=5.52$, $p=0.137$, PASS

lag=13: $\chi^2=11.41$, $p=0.577$, PASS

lag=17: $\chi^2=13.78$, $p=0.683$, PASS

Normality: $W=0.981$, $p=0.006$, FAIL (not normal)

CH test: $\chi^2=25.42$, $p=0.0129$, FAIL (ARCH effect)

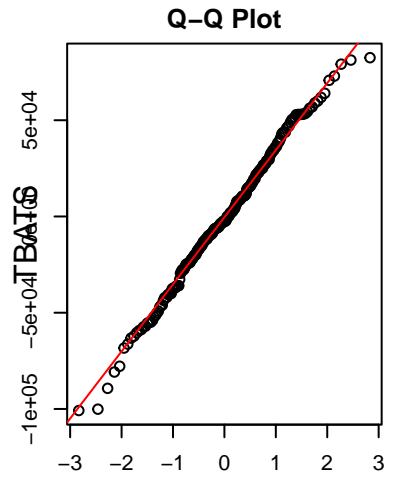
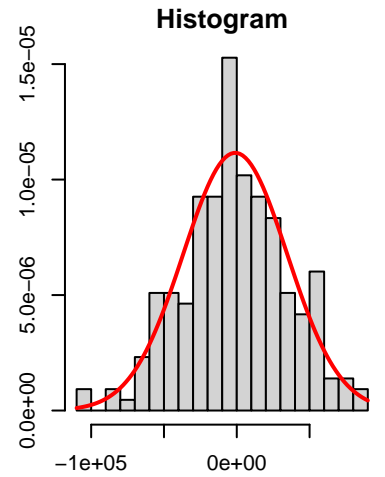
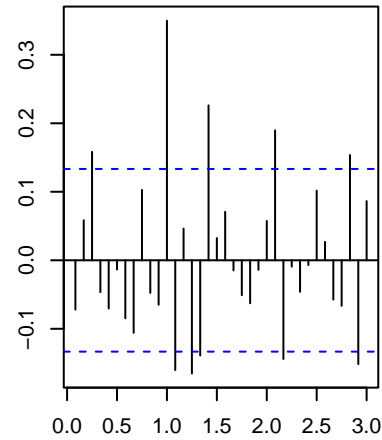
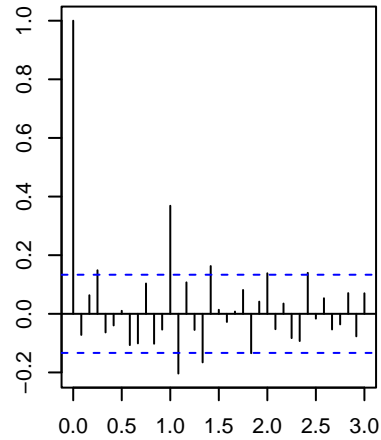
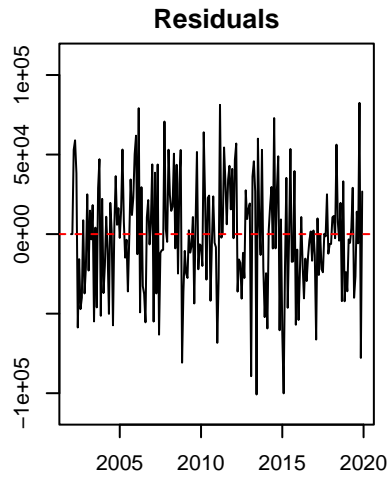
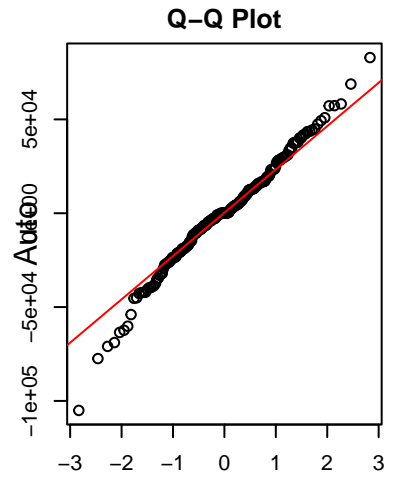
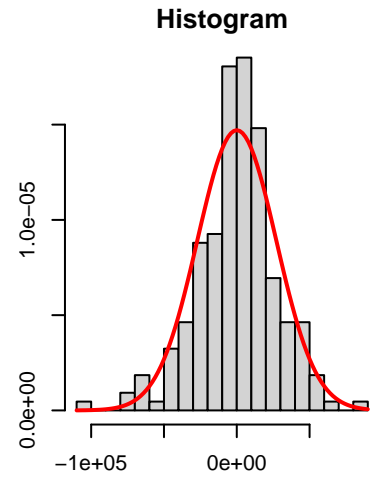
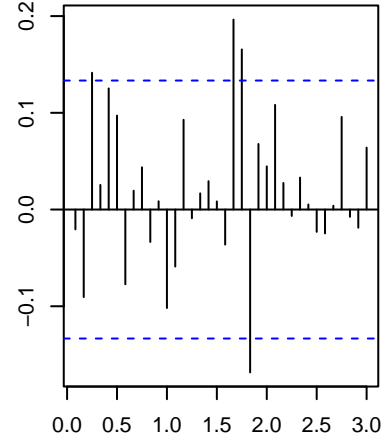
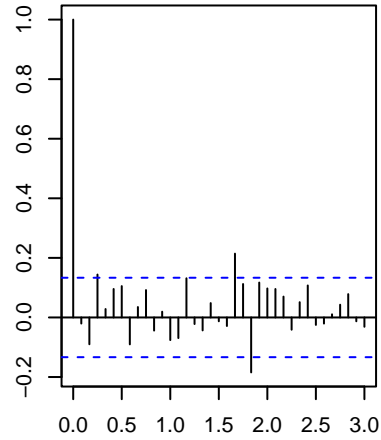
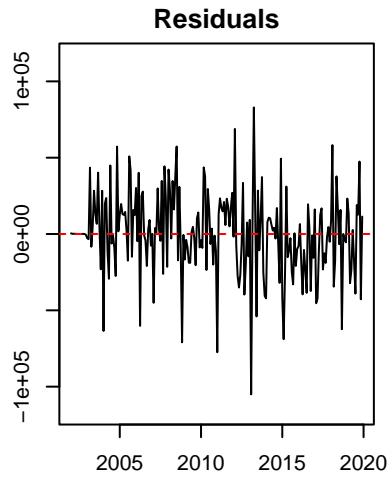
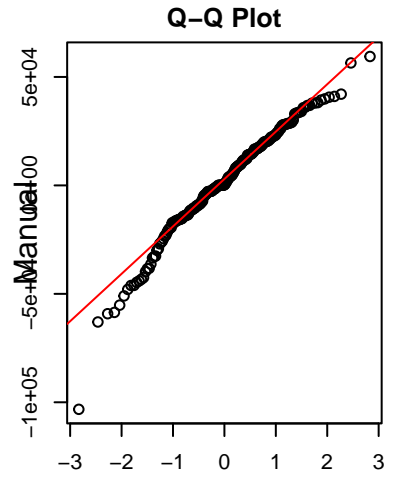
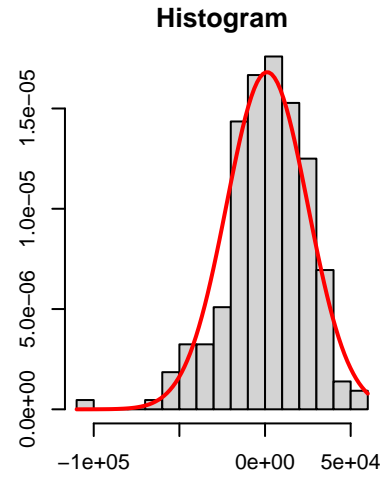
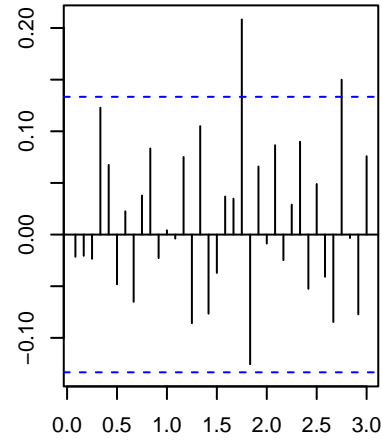
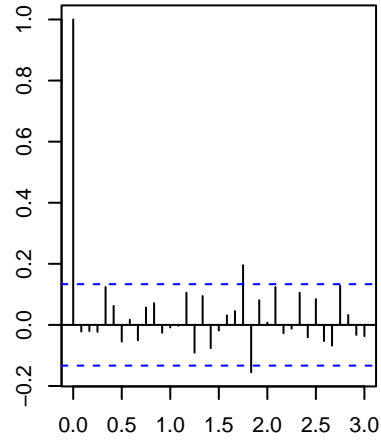
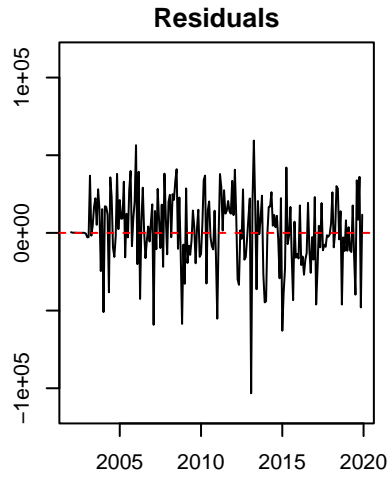
Q-statistic: 0.033, PASS (no remaining seasonality)

CF plots and Ljung-Box tests show conflict in

Auto model: Auto: SARIMA(0,1,1)x(2,1,2)_12

Ljung-Box Tests:

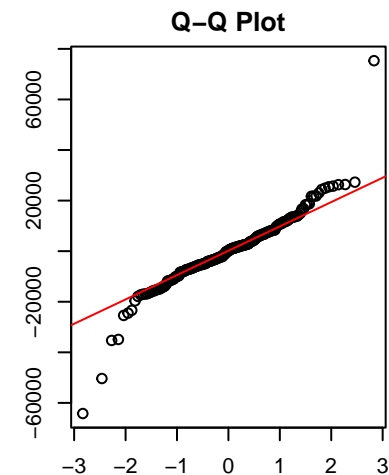
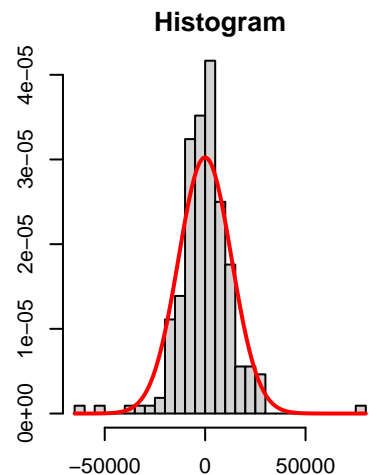
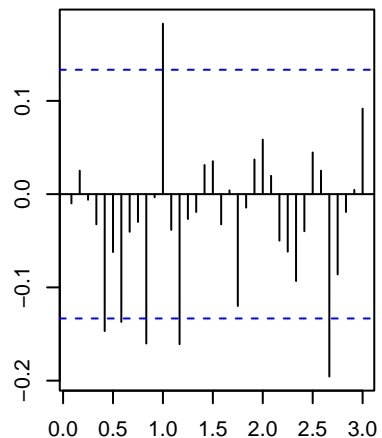
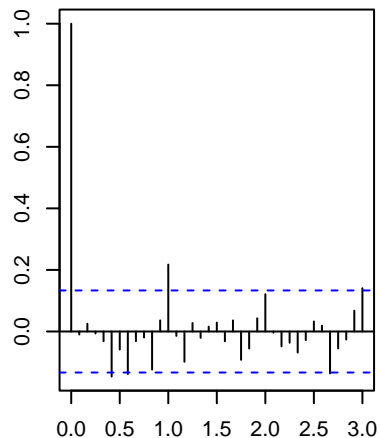
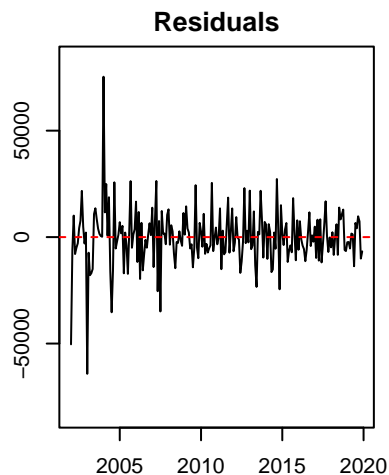
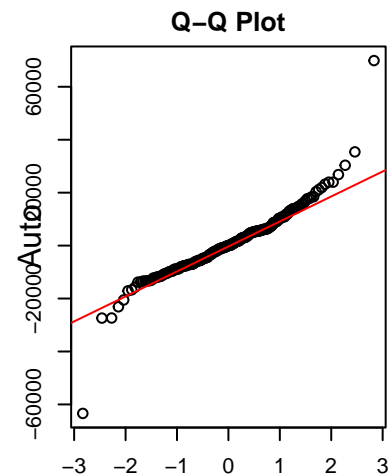
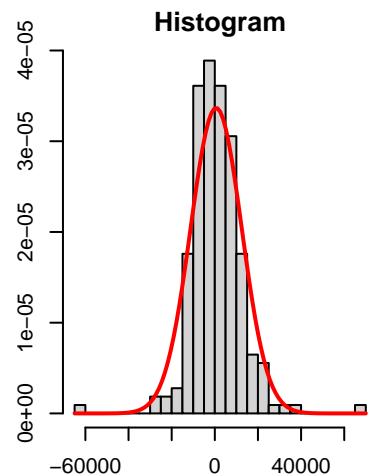
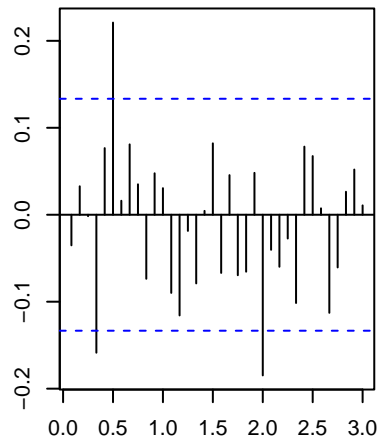
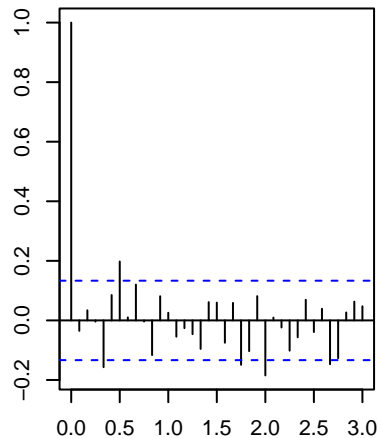
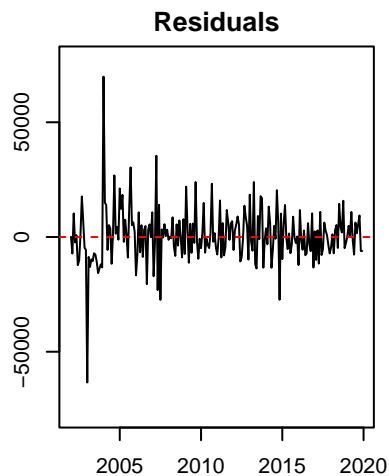
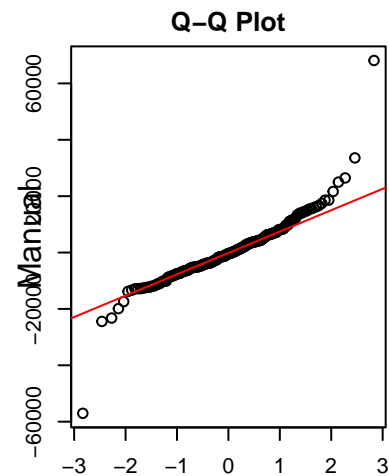
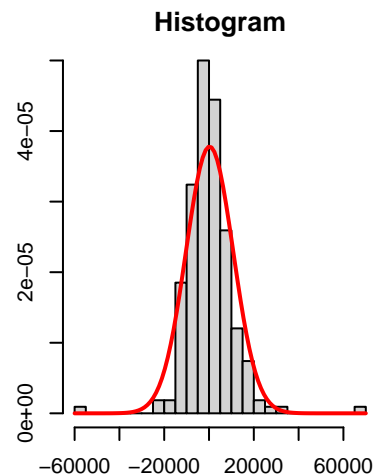
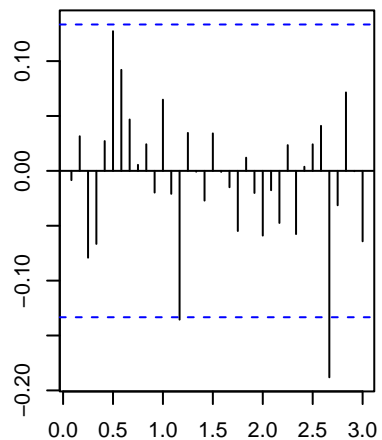
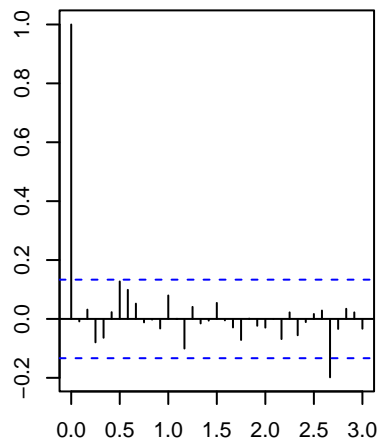
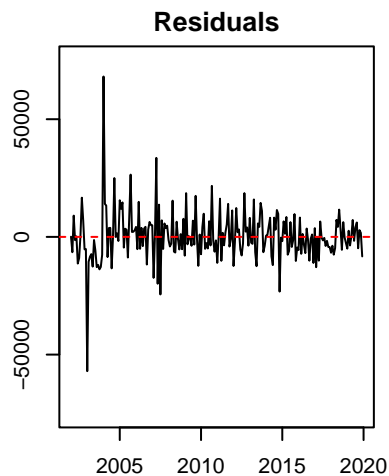
Enhanced Residual Diagnostics for Jurisdiction 10055



MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,3)x(0,1,2)_1
Ljung-Box Tests:
lag=3: X2=7.77, p=0.0509, PASS
lag=13: X2=16.75, p=0.211, PASS
lag=17: X2=33.43, p=0.00995, FAIL
normality: W=0.974, p=0.000441, FAIL (not normal)
RCH test: X2=10.94, p=0.534, PASS (constant variance)
quality ratio: 0.064, PASS (no remaining seasonality)
CF plots and Ljung-Box tests show conflicting results

Auto model: Auto: SARIMA(0,1,1)x(2,1,2)_12
Ljung-Box Tests:



Enhanced Residual Diagnostics for Jurisdiction 10061

Diag Error

TBATS

MODEL DIAGNOSTIC RESULTS

Manual model: Manual: SARIMA(3,1,3)x(2,0,1)_1

Ljung-Box Tests:

lag=1: X2=9.13, p=0.00252, FAIL

lag=11: X2=14.56, p=0.204, PASS

lag=15: X2=16.13, p=0.373, PASS

Normality: W=0.880, p=4.64e-12, FAIL (not norm

H test: X2=49.07, p=2.03e-06, FAIL (ARCH eff

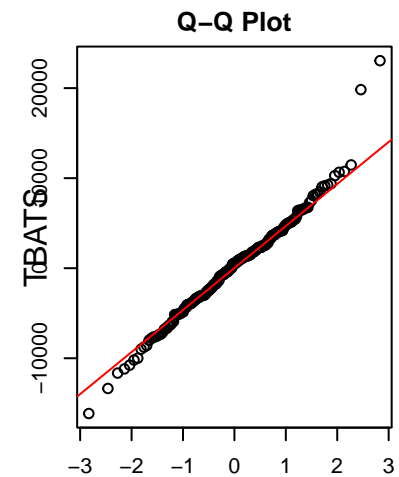
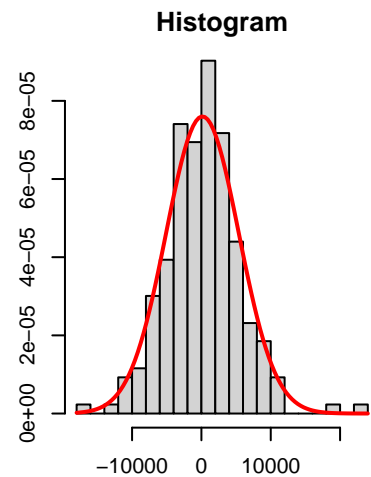
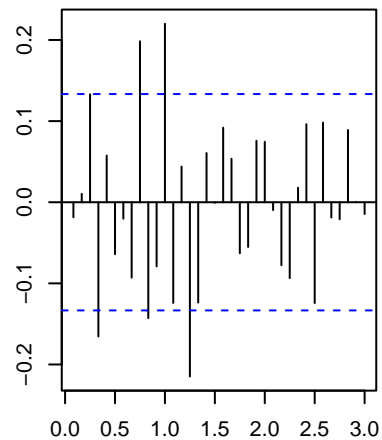
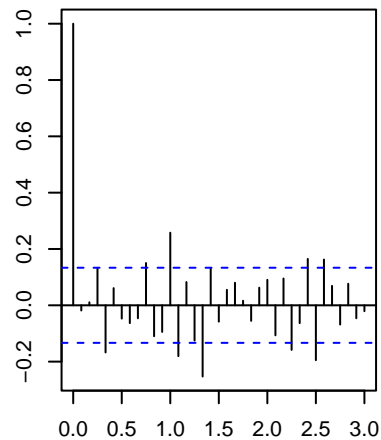
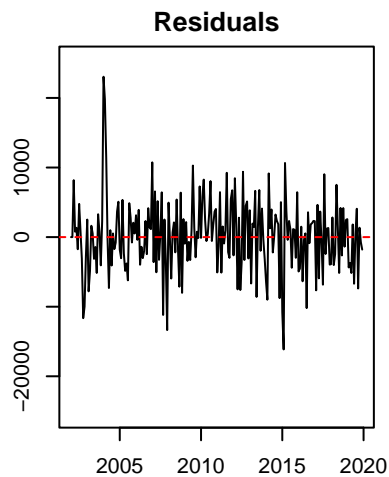
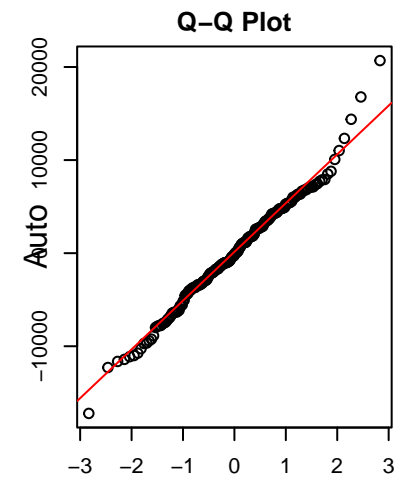
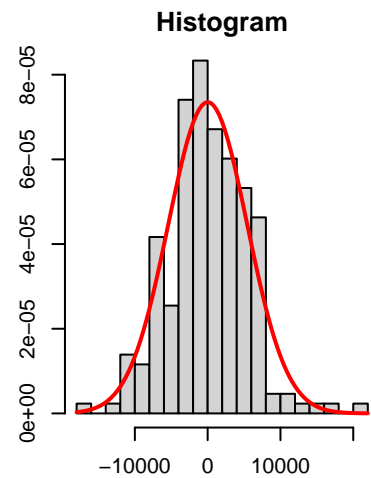
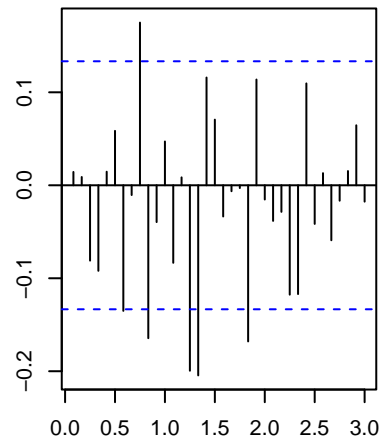
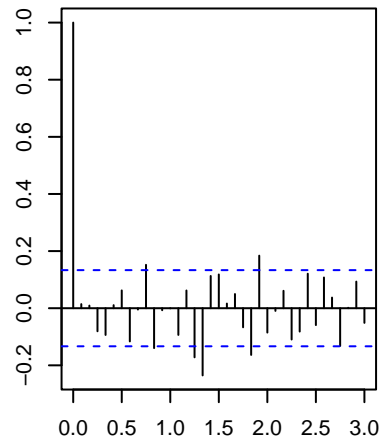
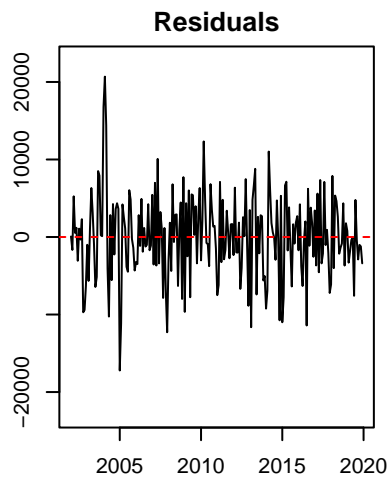
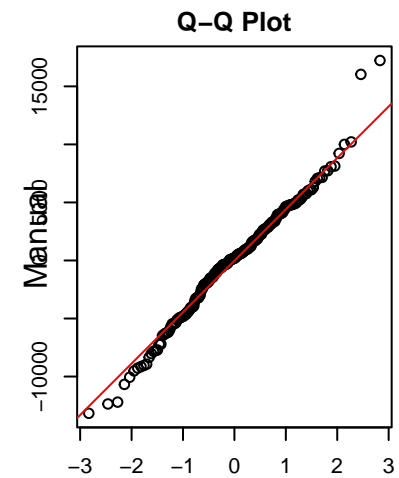
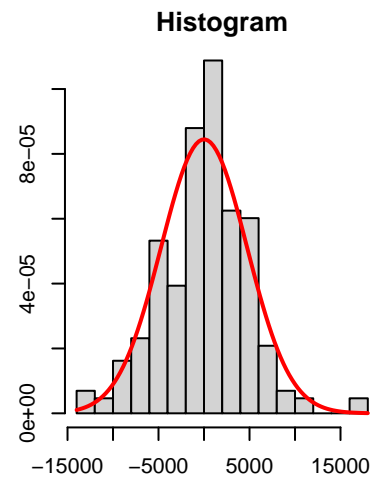
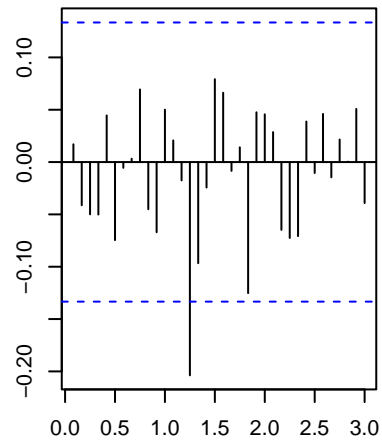
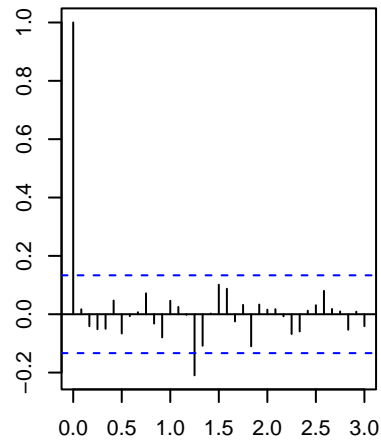
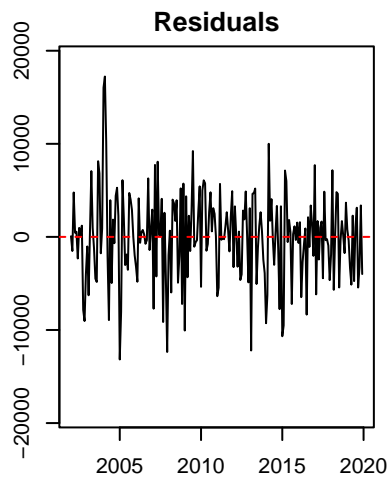
Quality ratio: 0.067, PASS (no remaining seas

Auto model: Auto: SARIMA(1,1,1)x(2,0,0)_12

Ljung-Box Tests:

lag=6: X2=22.78, p=0.000873, FAIL

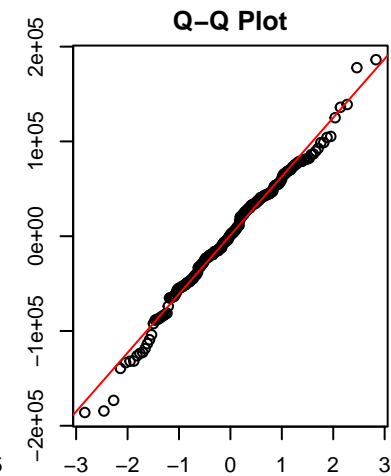
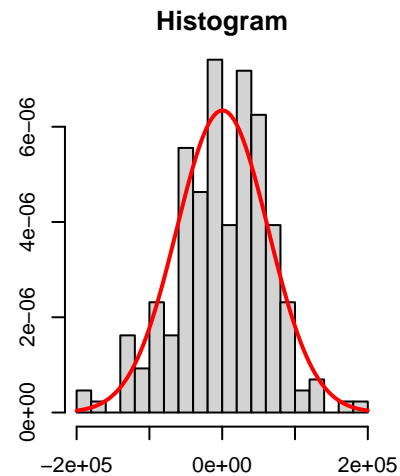
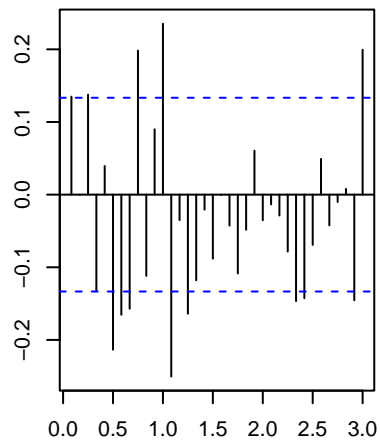
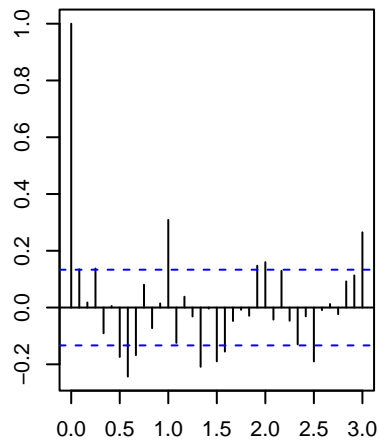
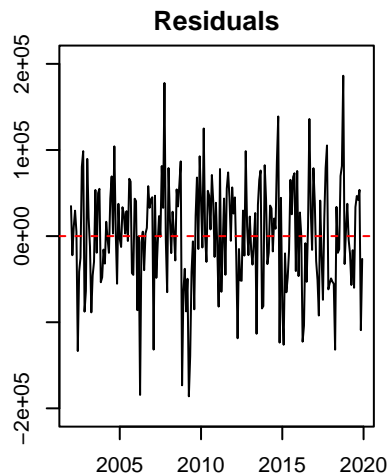
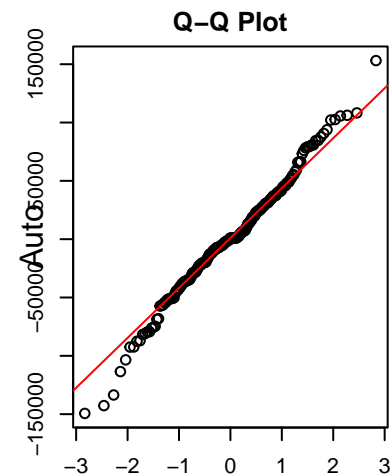
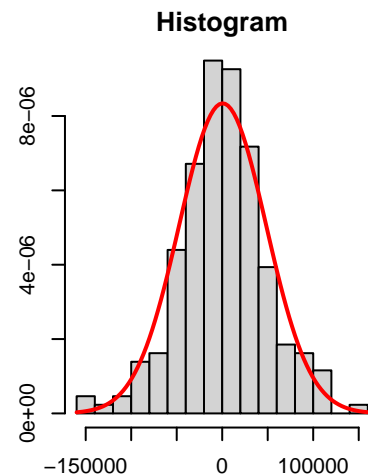
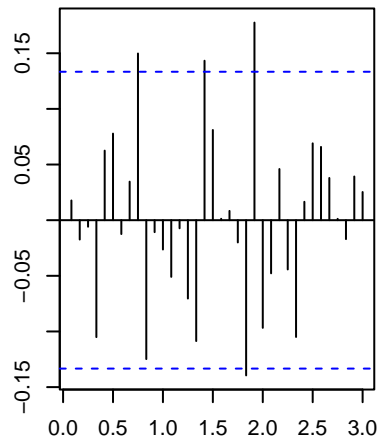
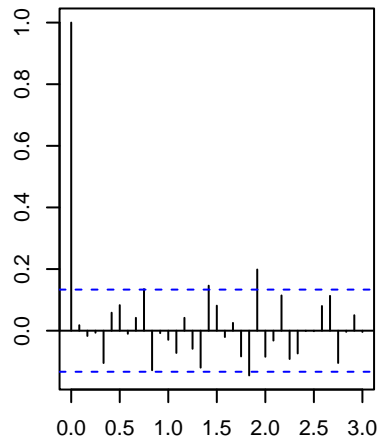
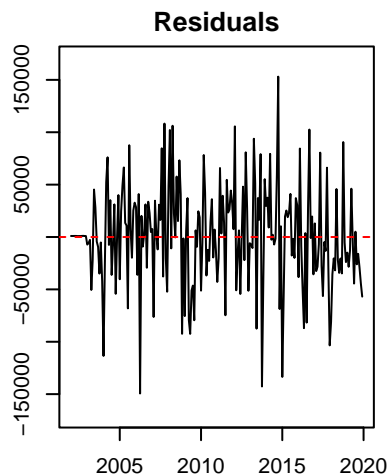
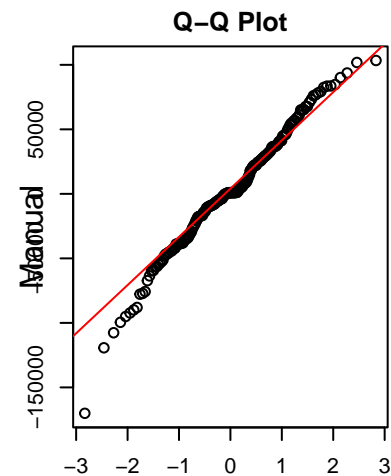
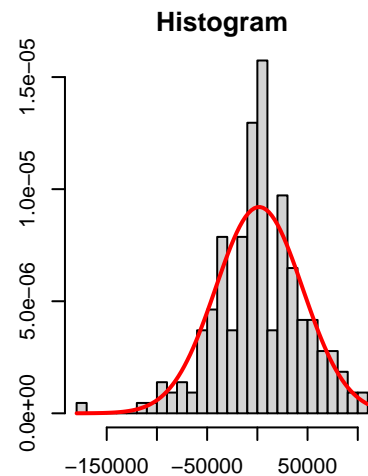
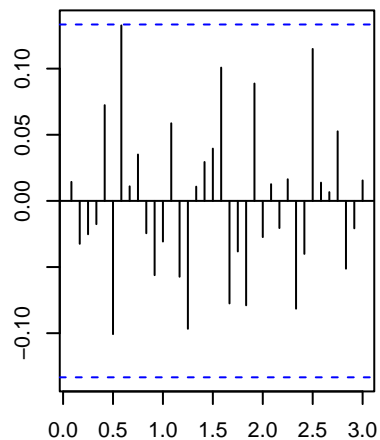
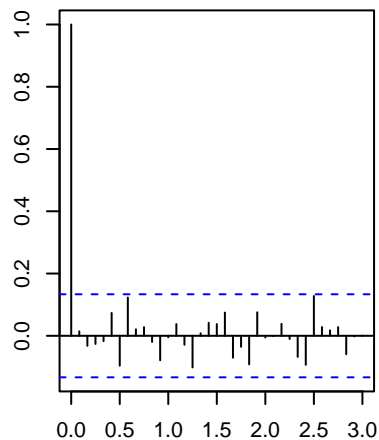
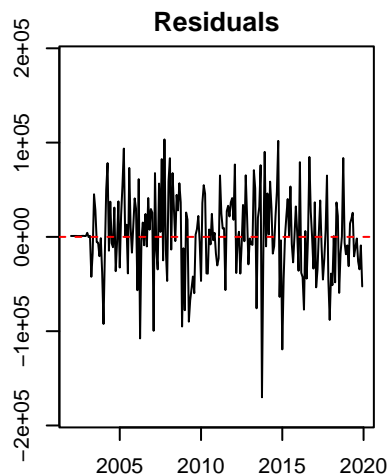
Enhanced Residual Diagnostics for Jurisdiction 10064



MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,3)×(1,0,1)_1
Ljung-Box Tests:
lag=3: X2=4.45, p=0.217, PASS
lag=13: X2=23.96, p=0.0315, FAIL
lag=17: X2=27.47, p=0.0515, PASS
Normality: W=0.985, p=0.0248, FAIL (not normal)
H test: X2=47.43, p=3.92e-06, FAIL (ARCH effect)
Quality ratio: 0.080, PASS (no remaining seasonality)
CF plots and Ljung-Box tests show conflict in annual model

Auto model: Auto: SARIMA(2,1,1)×(2,0,0)_12
Ljung-Box Tests:



Diag Error

TBATS

MODEL DIAGNOSTIC RESULTS

anual model: Manual: SARIMA(3,0,3)x(0,1,3)_1

Ljung-Box Tests:

lag=1: X2=7.53, p=0.00607, FAIL

lag=11: X2=15.19, p=0.174, PASS

lag=15: X2=18.93, p=0.217, PASS

Normality: W=0.984, p=0.017, FAIL (not normal)

QCH test: X2=19.36, p=0.0801, PASS (const. vs

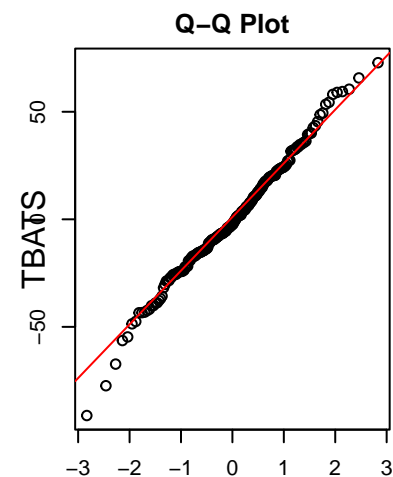
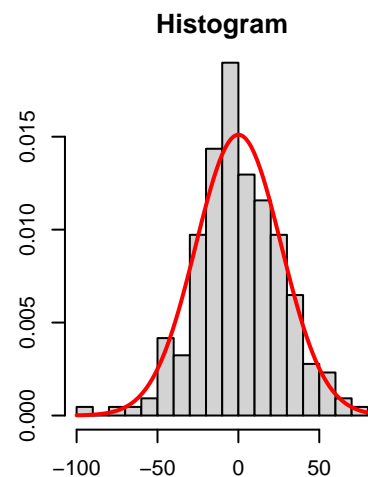
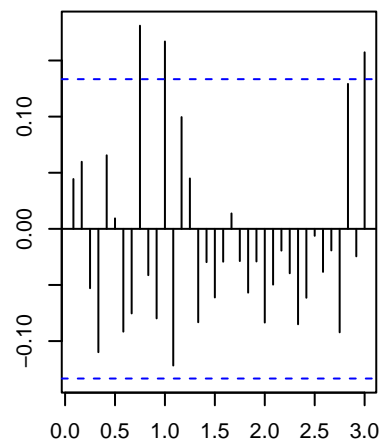
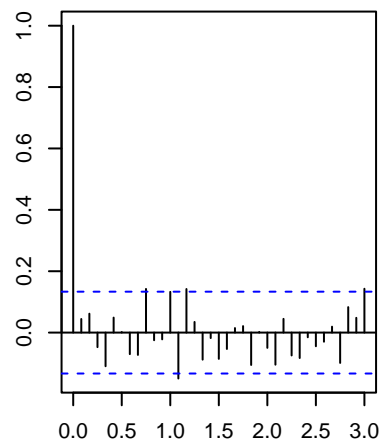
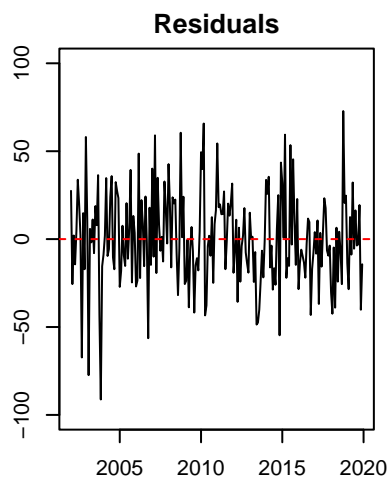
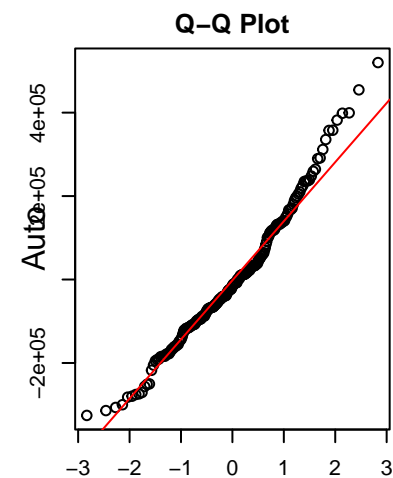
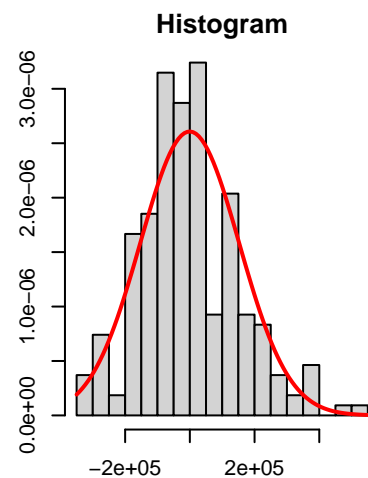
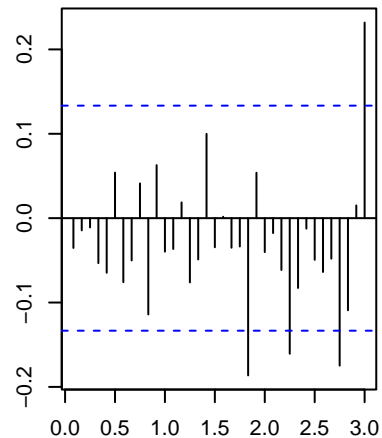
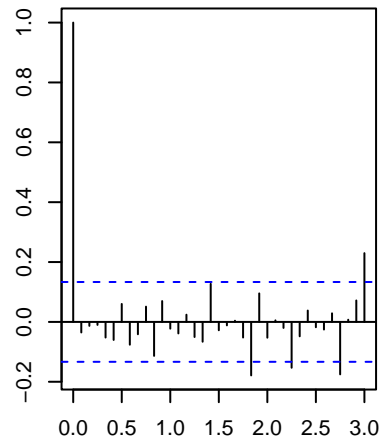
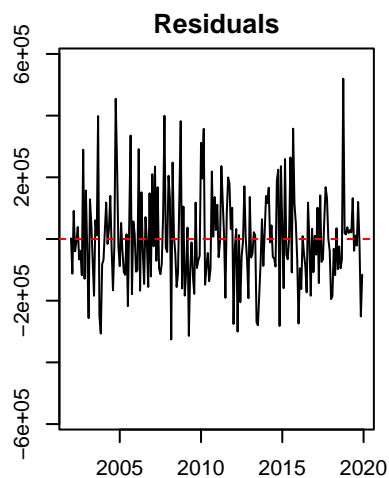
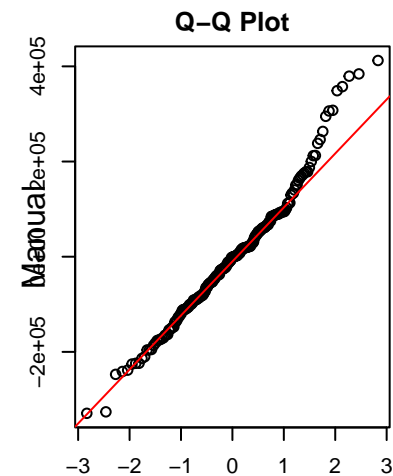
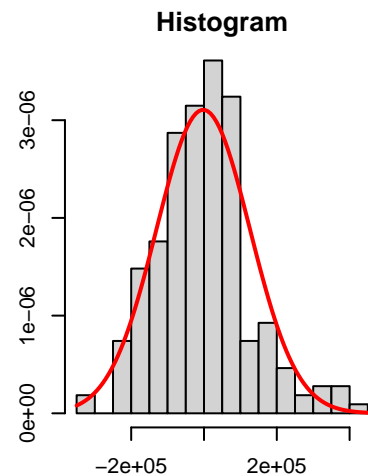
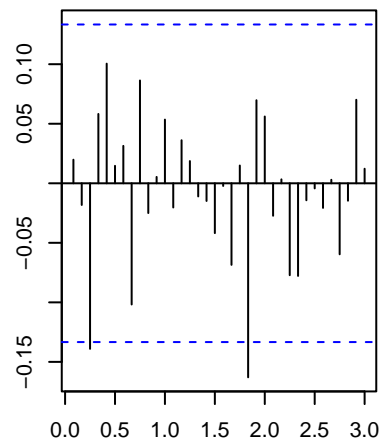
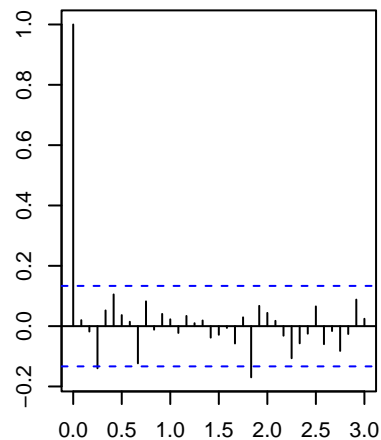
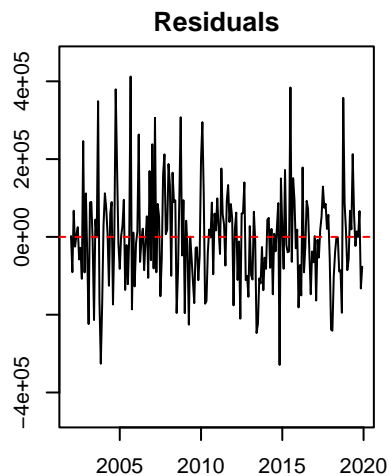
ality ratio: 0.069, PASS (no remaining seasonality)

CF plots and Ljung-Box tests show conflicting results

Auto model: Auto: SARIMA(3,0,0)x(0,1,2)_12

Ljung-Box Tests:

Enhanced Residual Diagnostics for Jurisdiction 20004

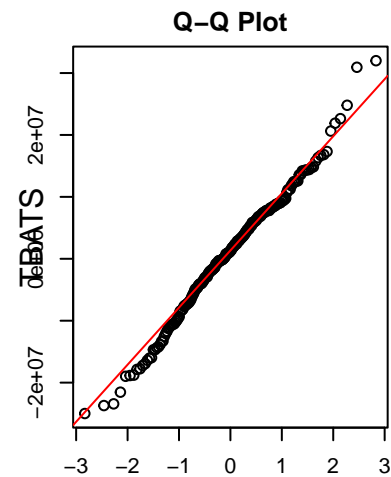
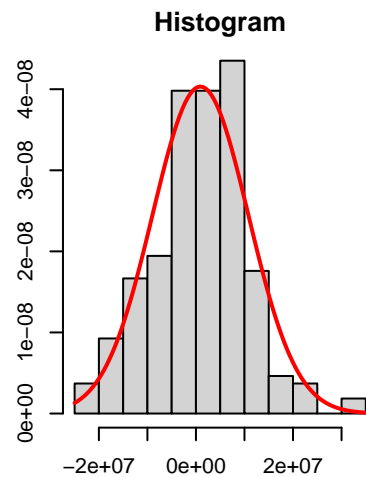
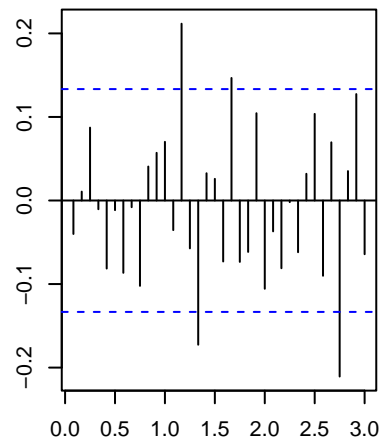
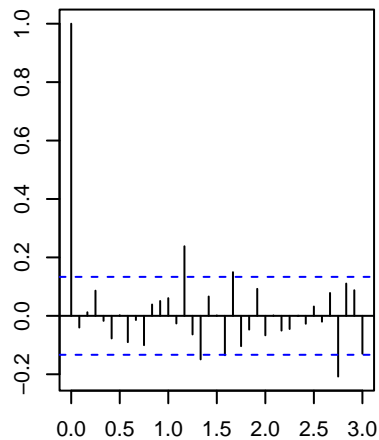
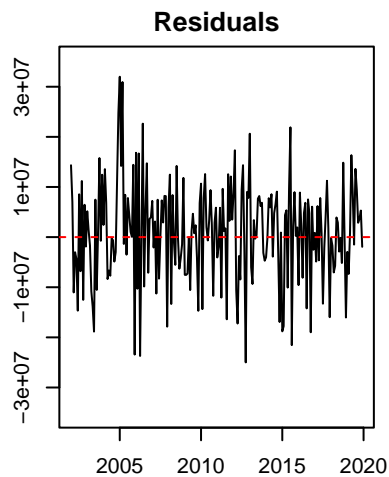
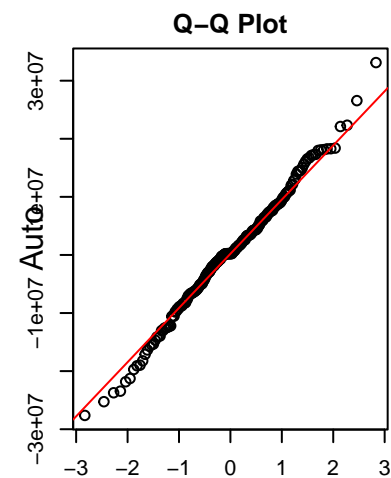
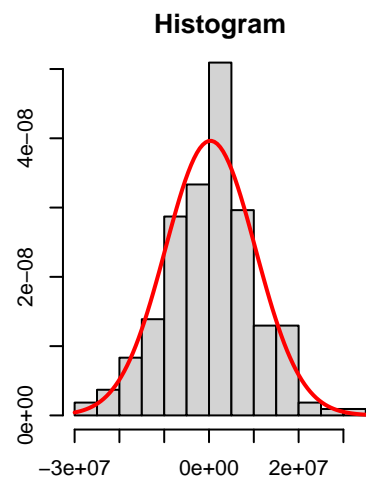
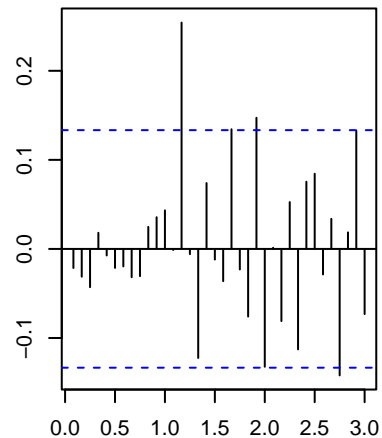
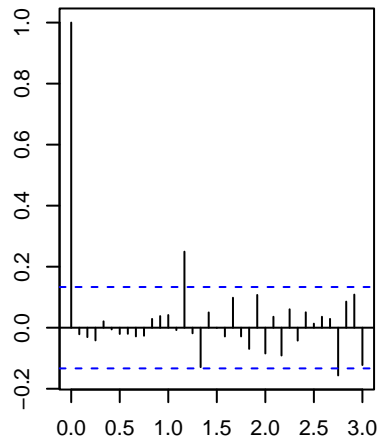
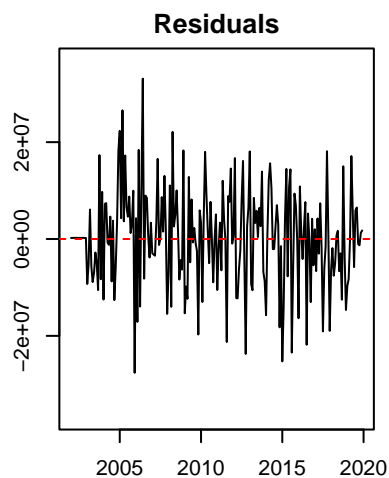
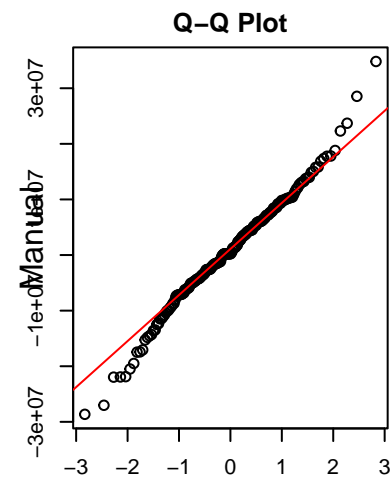
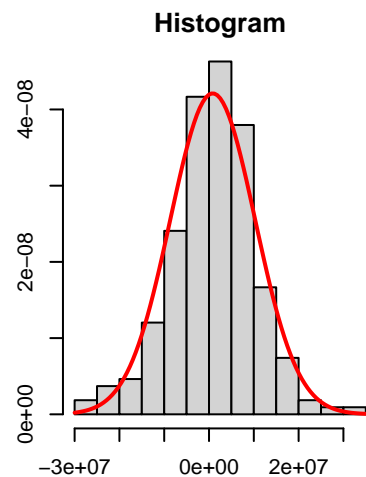
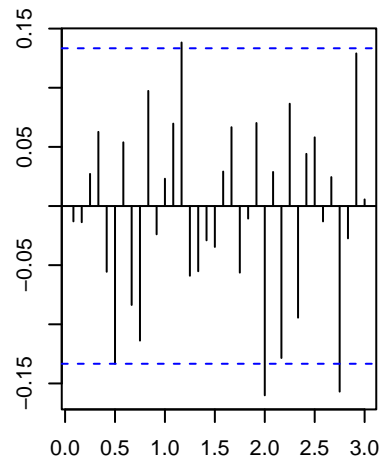
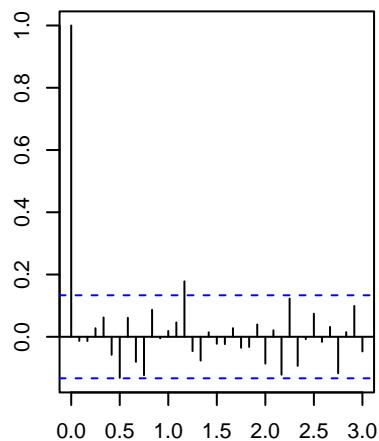
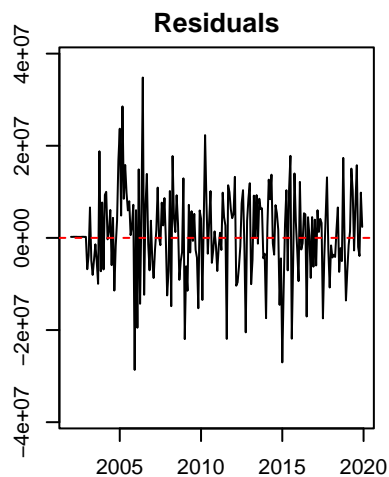


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(3,1,3)×(3,0,1)_1
Ljung-Box Tests:
lag=10: X2=15.20, p=0.125, PASS
lag=14: X2=23.97, p=0.0462, FAIL
ormality: W=0.977, p=0.00155, FAIL (not norm
ARCH test: X2=9.90, p=0.625, PASS (const. var
ality ratio: 0.076, PASS (no remaining seas
CF plots and Ljung-Box tests show conflictin

Auto model: Auto: SARIMA(4,1,0)×(1,0,0)_12
Ljung-Box Tests:
laq=5: X2=7.79, p=0.168, PASS

Enhanced Residual Diagnostics for Jurisdiction 20008

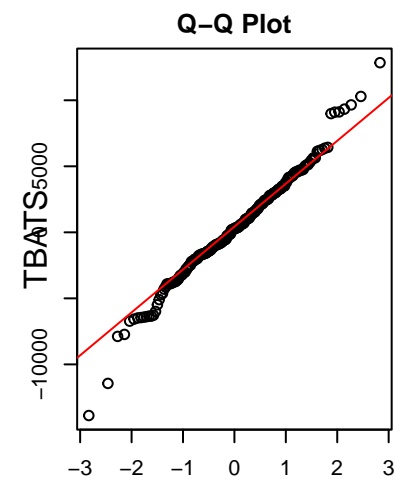
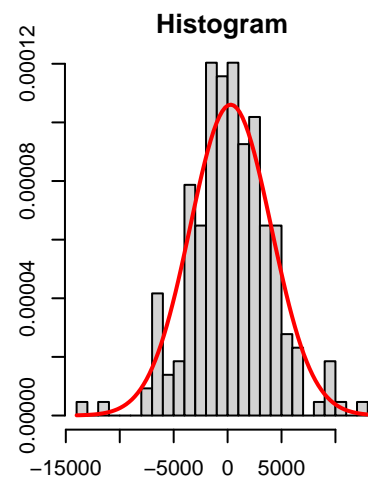
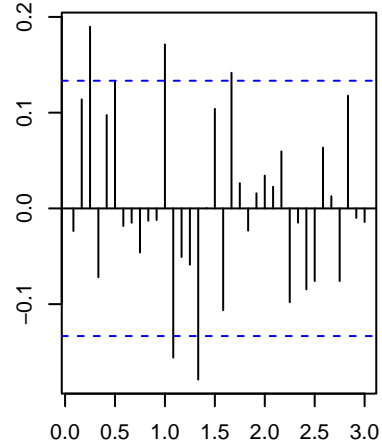
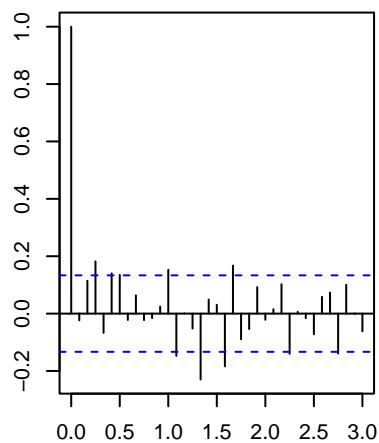
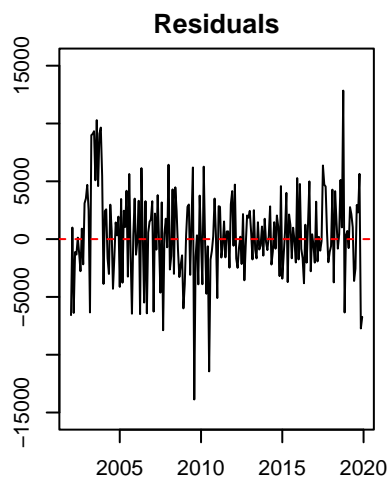
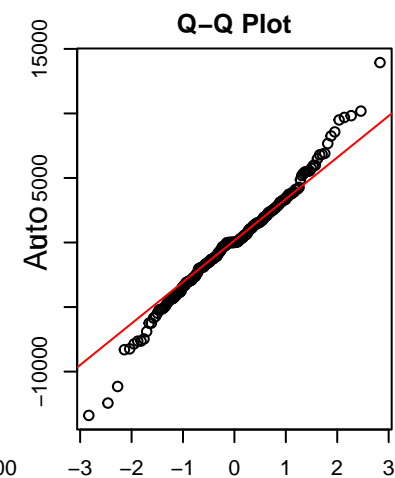
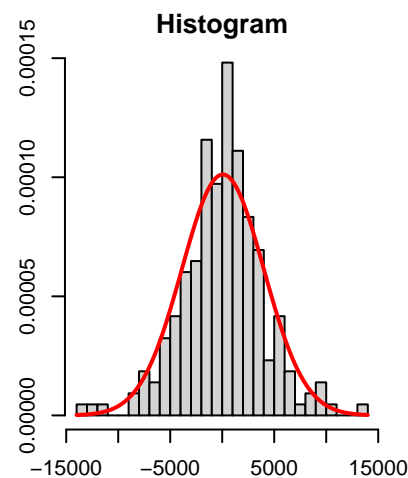
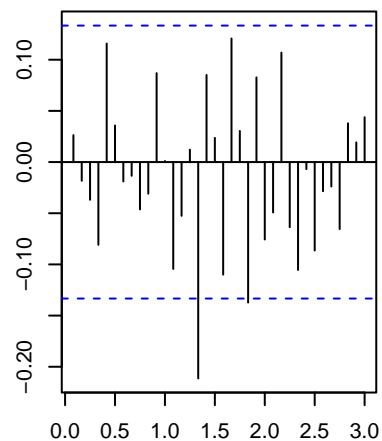
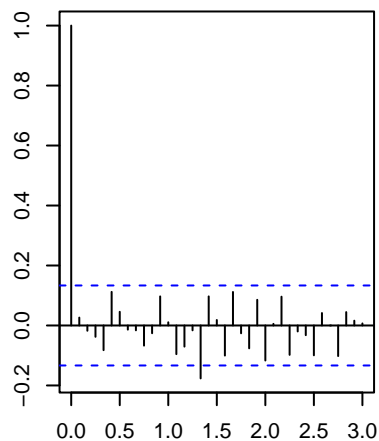
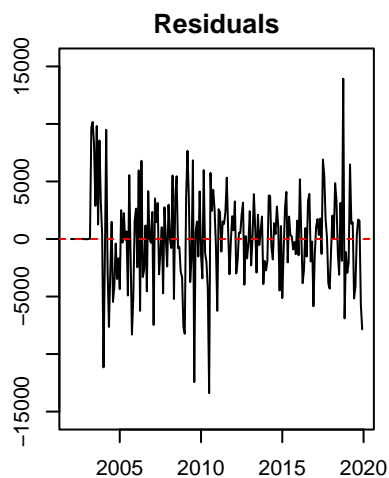
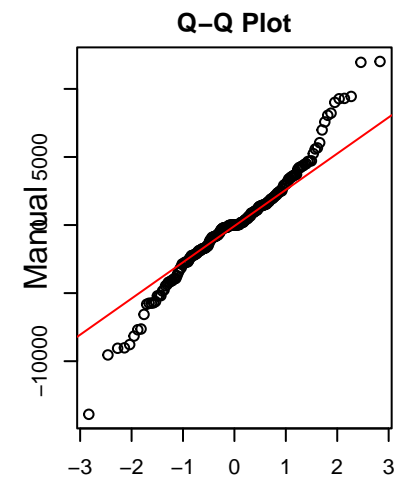
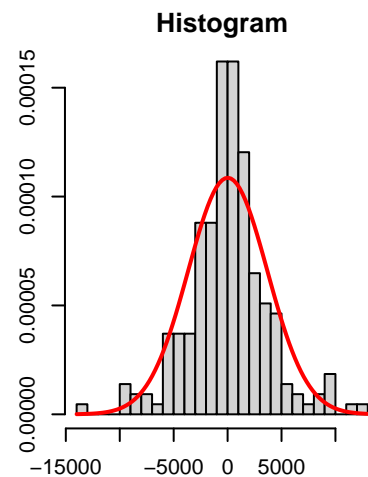
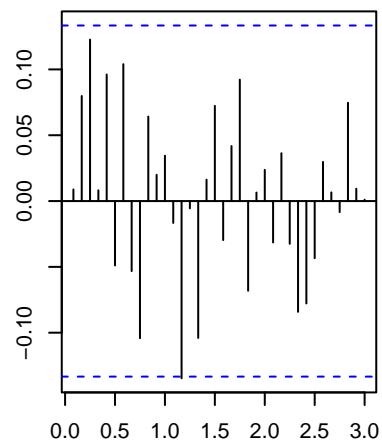
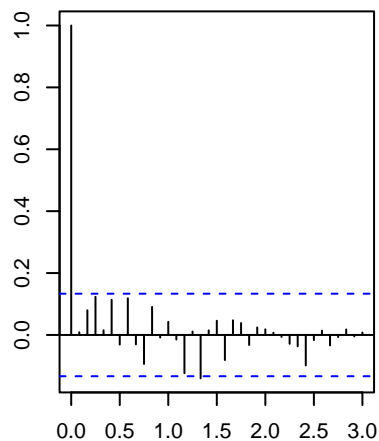
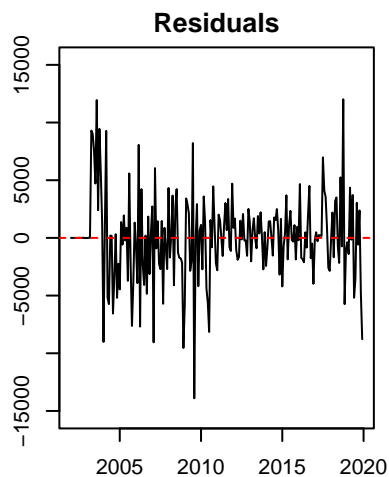


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(3,0,3)×(1,1,2)_1
Ljung-Box Tests:
lag=1: X2=13.20, p=0.000279, FAIL
lag=11: X2=23.54, p=0.0148, FAIL
lag=15: X2=26.30, p=0.035, FAIL
Normality: W=0.988, p=0.0714, PASS (normal)
χCH test: X2=19.69, p=0.0732, PASS (const. vs
ality ratio: 0.081, PASS (no remaining seas

Auto model: Auto: SARIMA(3,0,0)×(0,1,1)_12
Ljung-Box Tests:
laq=5: X2=1.51, p=0.912, PASS

Enhanced Residual Diagnostics for Jurisdiction 20010

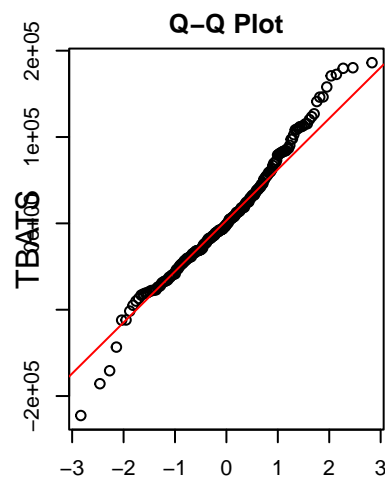
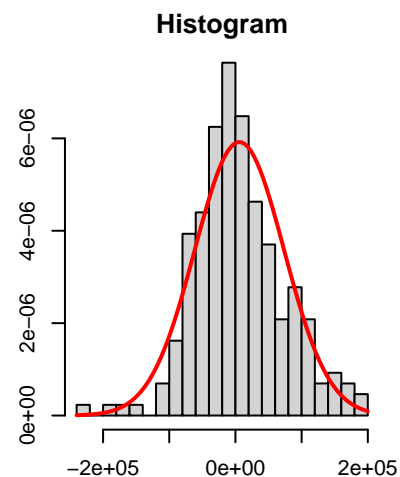
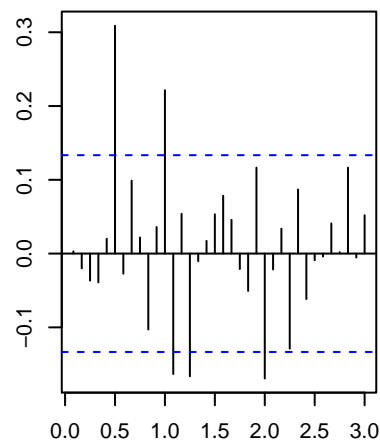
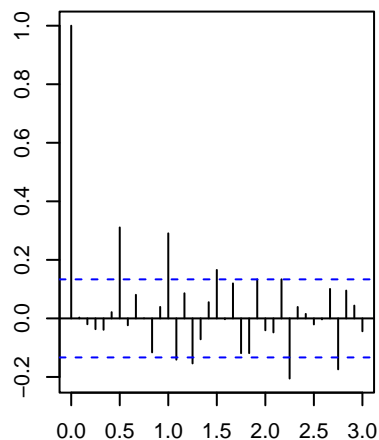
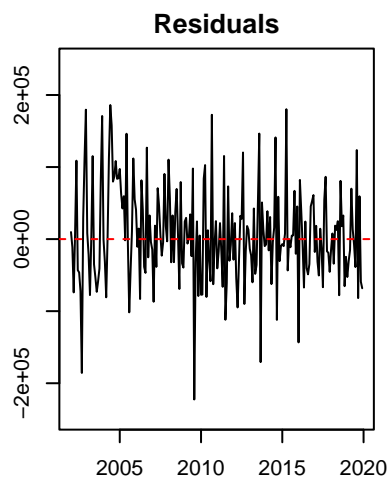
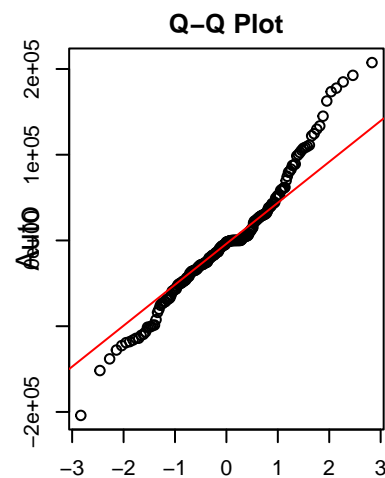
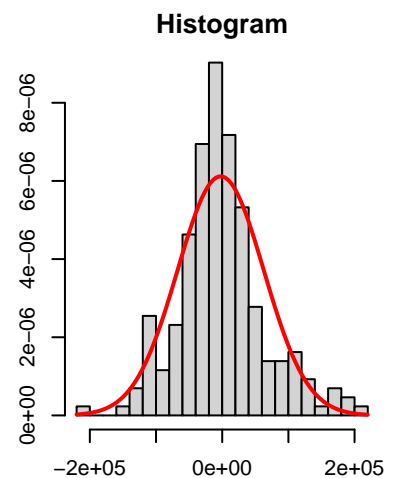
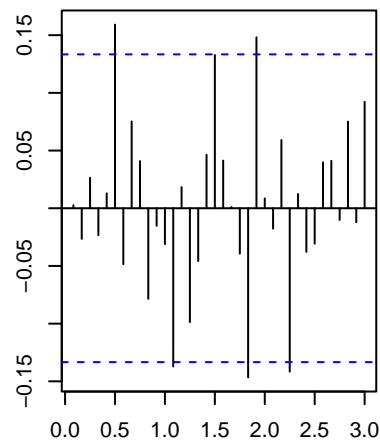
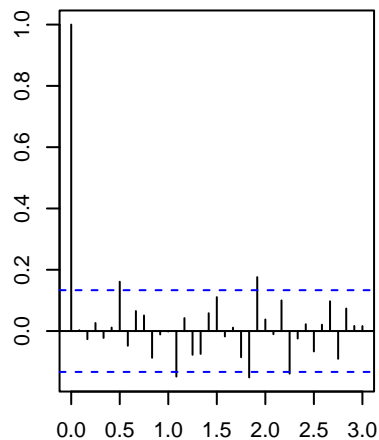
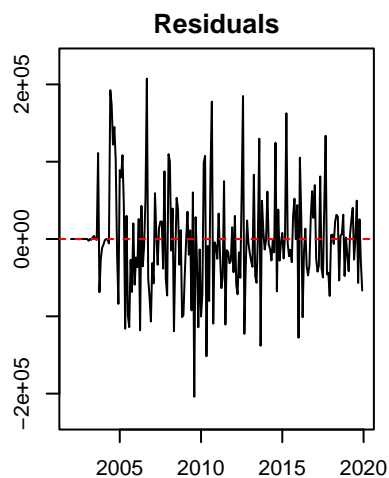
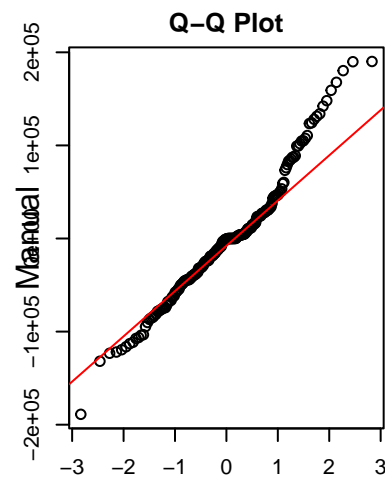
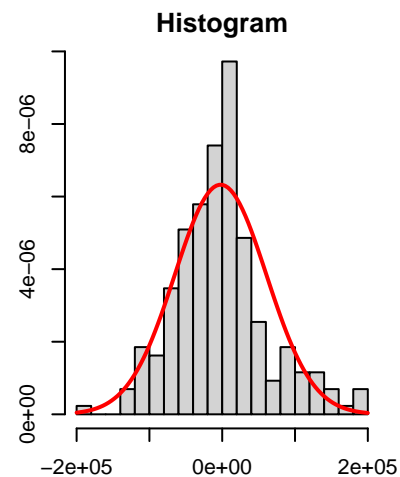
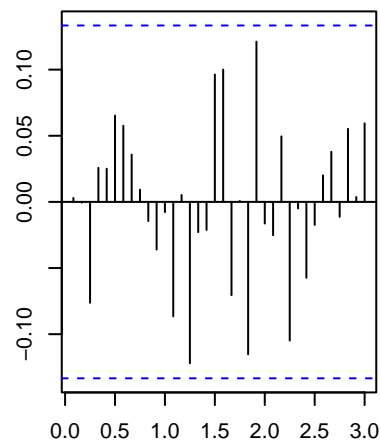
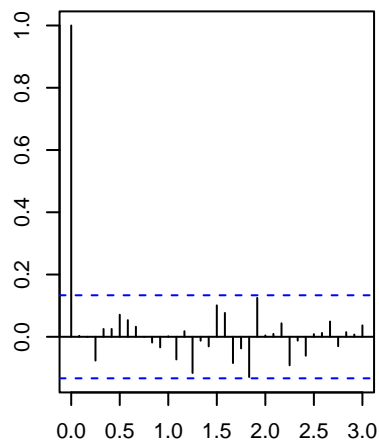
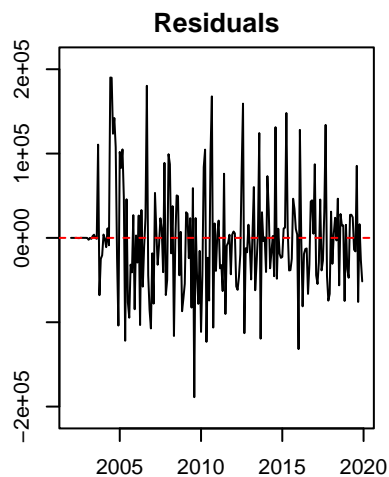


MODEL DIAGNOSTIC RESULTS

```
annual model: Manual: SARIMA(2,1,2)x(1,0,1)_1
Ljung-Box Tests:
lag=4: X2=15.18, p=0.00434, FAIL
lag=14: X2=26.54, p=0.0221, FAIL
lag=18: X2=27.38, p=0.0721, PASS
ormality: W=0.967, p=6.4e-05, FAIL (not norm
H test: X2=36.66, p=0.000253, FAIL (ARCH eff
ality ratio: 0.092, PASS (no remaining seas

Auto model: Auto: SARIMA(3,1,0)x(2,0,0)_12
Ljung-Box Tests:
laq=5: X2=6.59, p=0.253, PASS
```

Enhanced Residual Diagnostics for Jurisdiction 20018

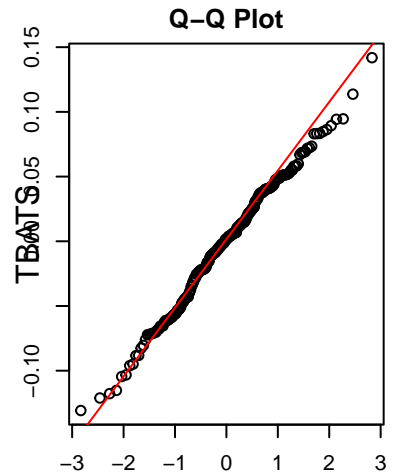
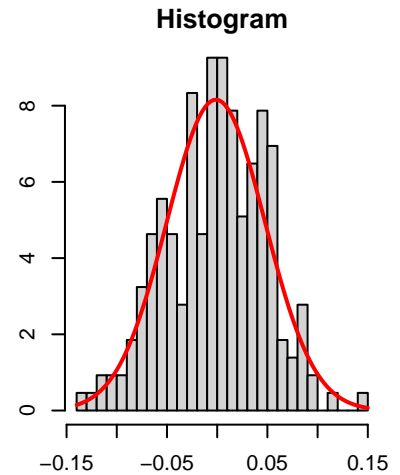
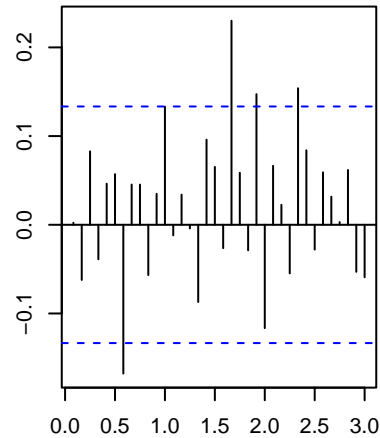
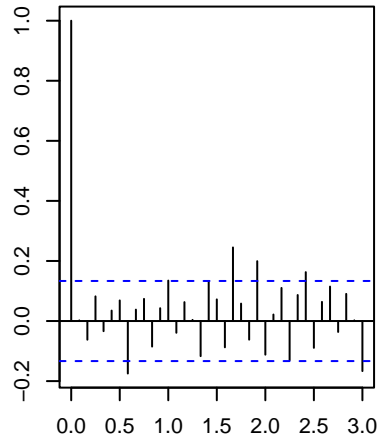
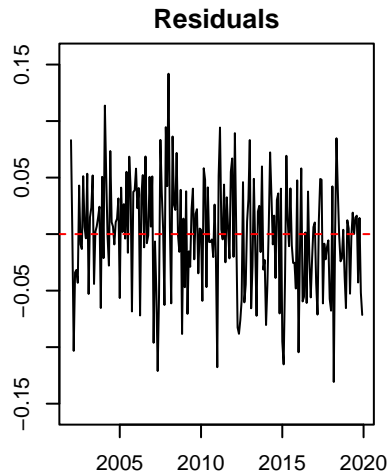
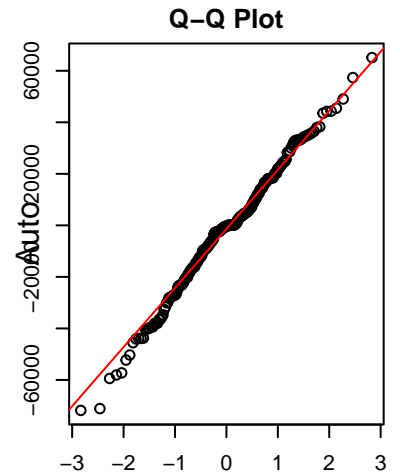
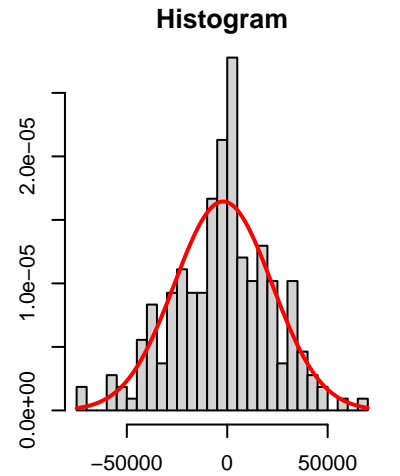
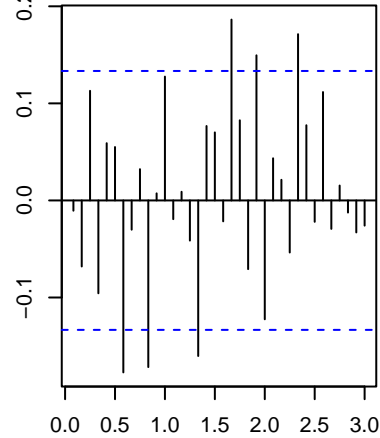
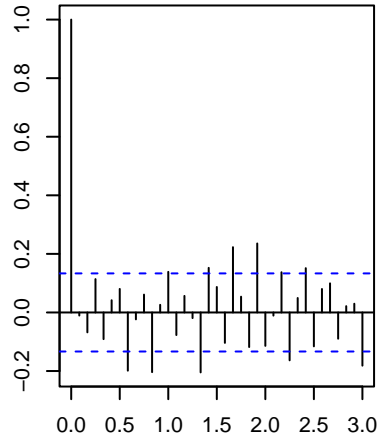
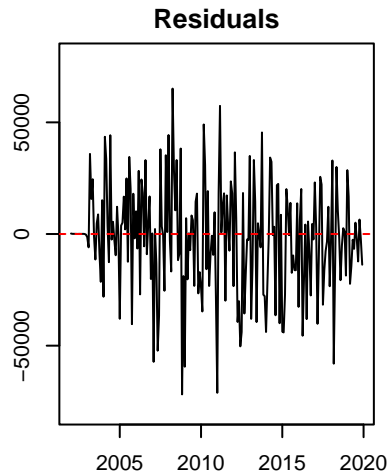
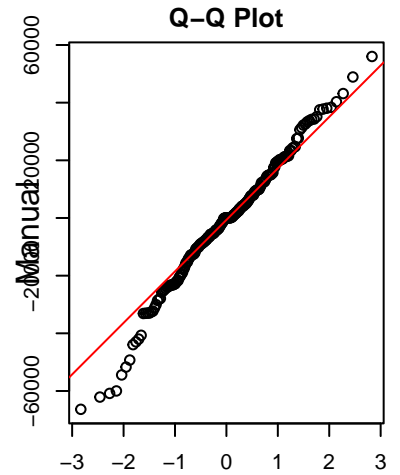
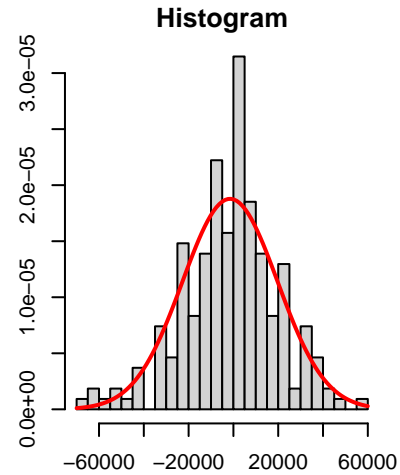
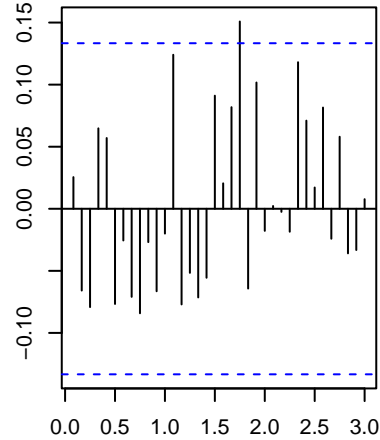
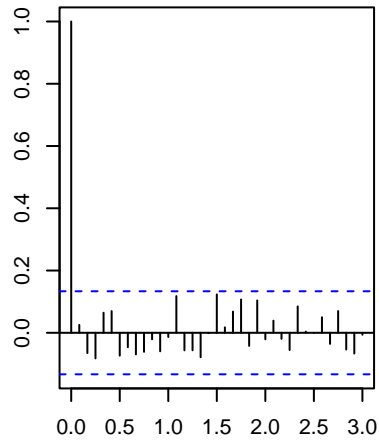
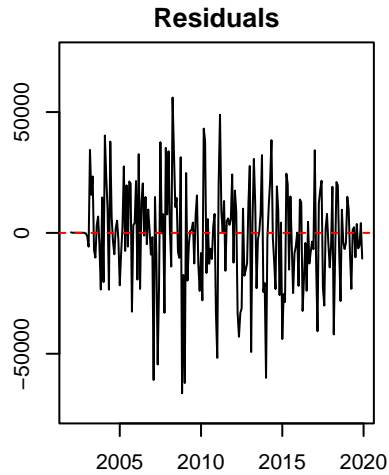


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,3)×(0,1,2)_1
Ljung-Box Tests:
lag=3: X2=3.65, p=0.301, PASS
lag=13: X2=14.18, p=0.361, PASS
lag=17: X2=22.38, p=0.171, PASS
normality: W=0.967, p=6.87e-05, FAIL (not normal)
ARCH test: X2=24.74, p=0.0161, FAIL (ARCH effect)
p-value ratio: 0.087, PASS (no remaining seasonality)

Auto model: Auto: SARIMA(0,1,1)×(2,1,2)_12
Ljung-Box Tests:
lag=5: X2=10.06, p=0.0736, PASS

Enhanced Residual Diagnostics for Jurisdiction 20072

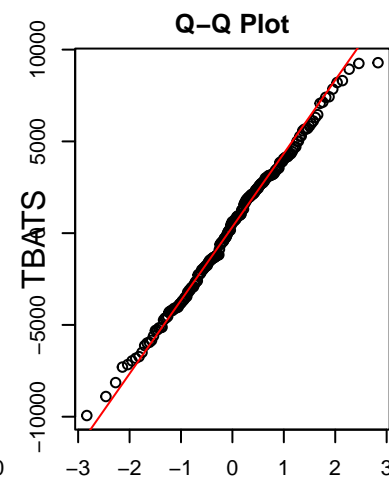
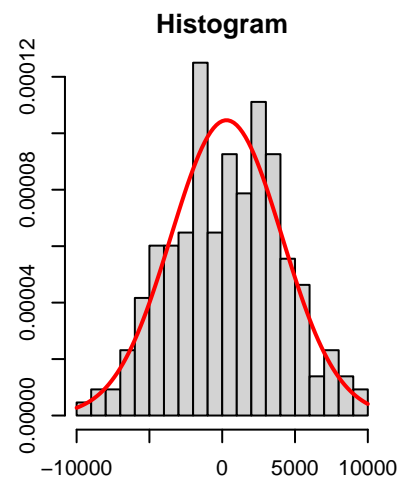
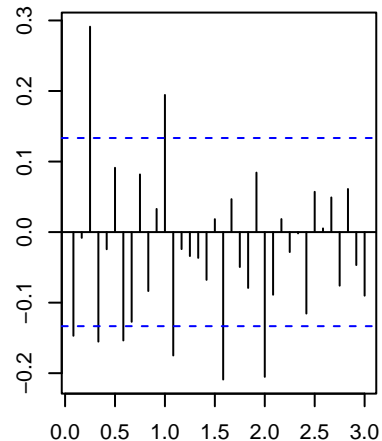
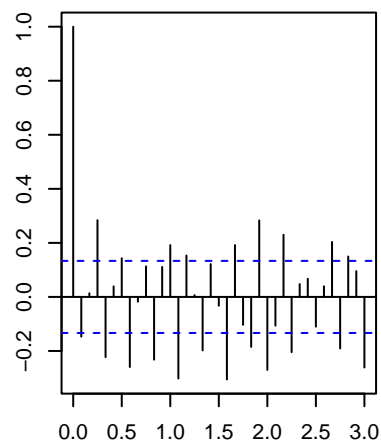
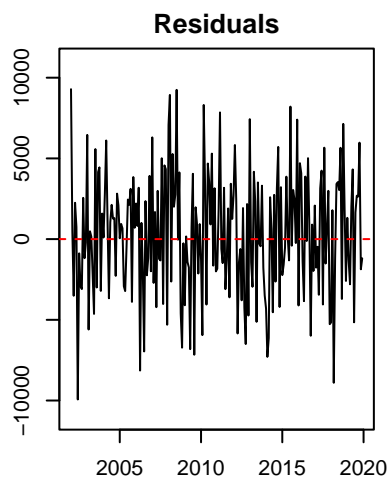
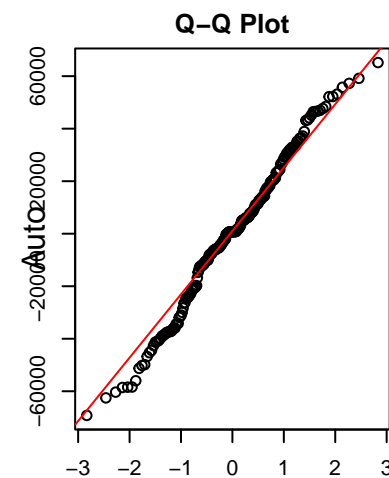
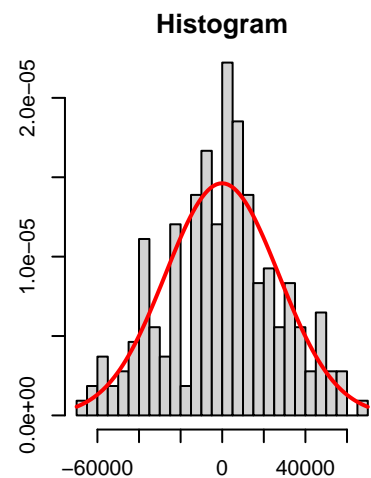
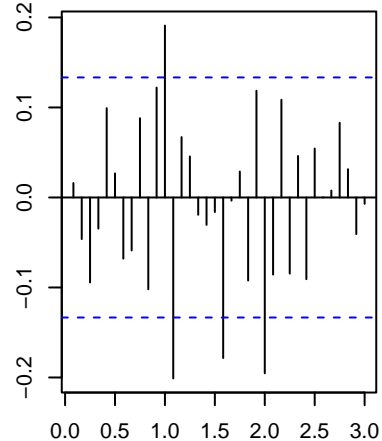
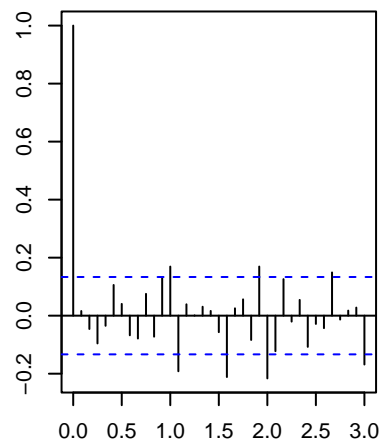
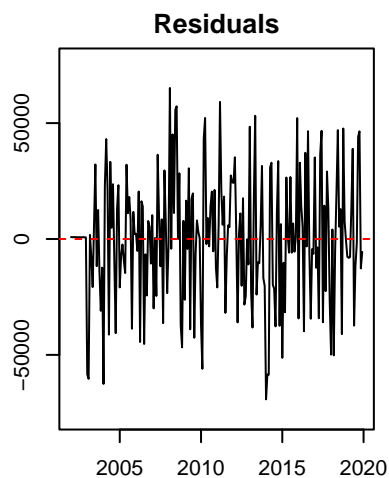
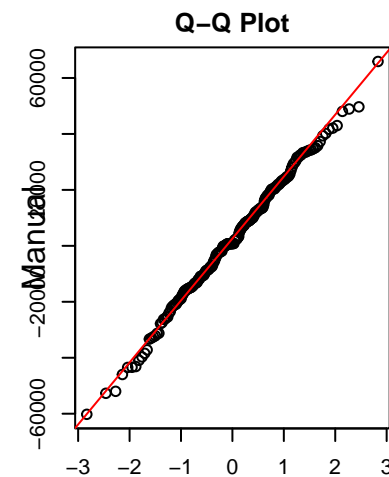
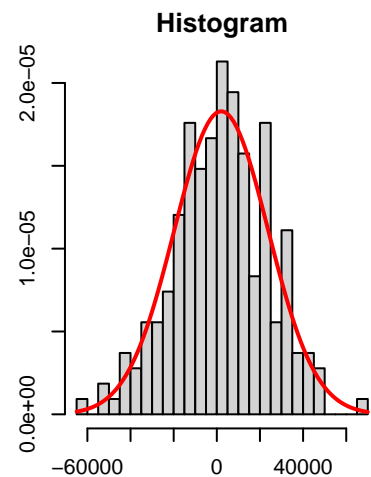
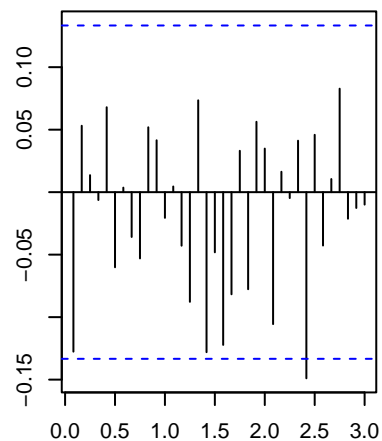
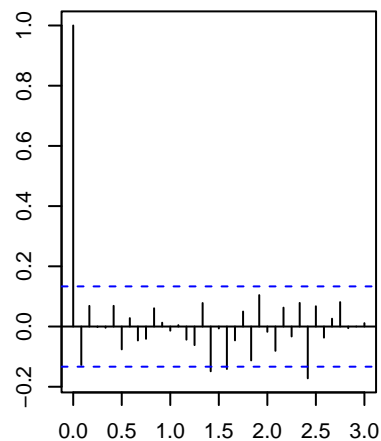
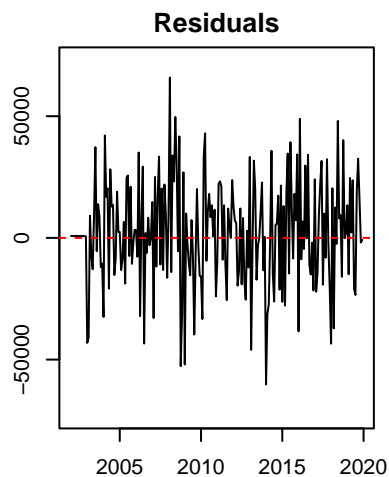


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,3)x(1,1,1)_1
Ljung-Box Tests:
lag=3: X2=8.31, p=0.0399, FAIL
lag=13: X2=20.13, p=0.0919, PASS
lag=17: X2=26.08, p=0.073, PASS
Normality: W=0.986, p=0.0375, FAIL (not normal)
QCH test: X2=20.14, p=0.0645, PASS (constant variance)
Quality ratio: 0.053, PASS (no remaining seasonality)
CF plots and Ljung-Box tests show conflicting results

Auto model: Auto: SARIMA(0,1,1)x(0,1,1)_12
Ljung-Box Tests:

Enhanced Residual Diagnostics for Jurisdiction 20075

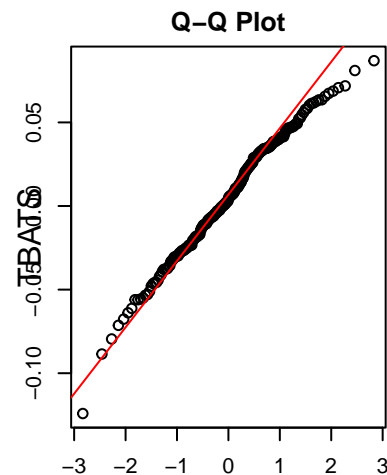
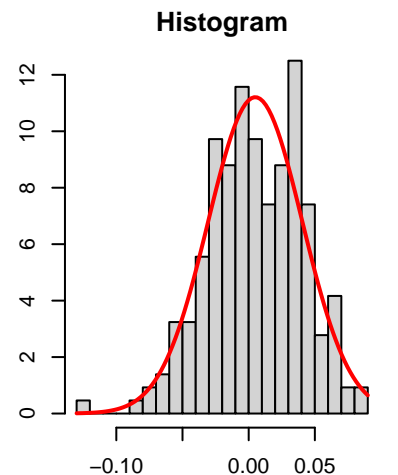
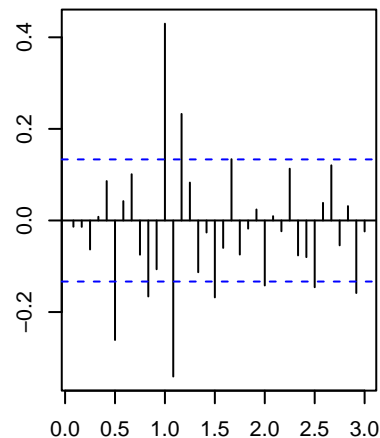
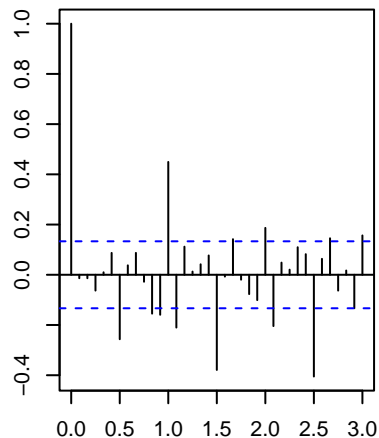
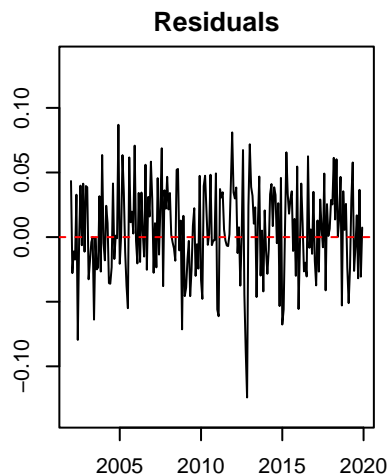
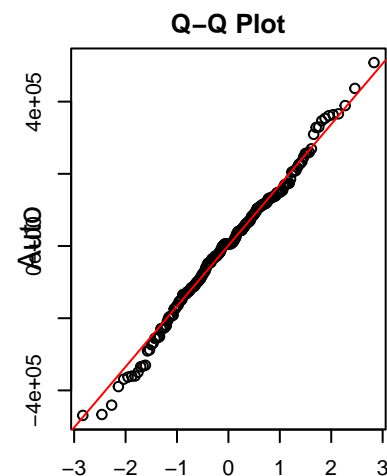
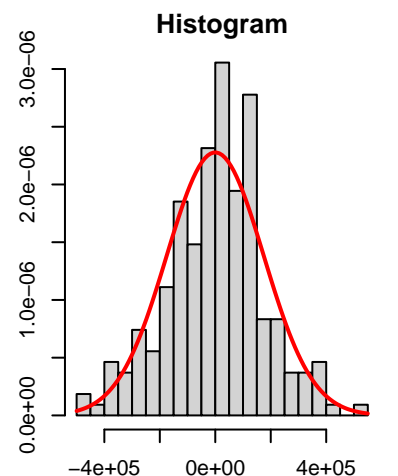
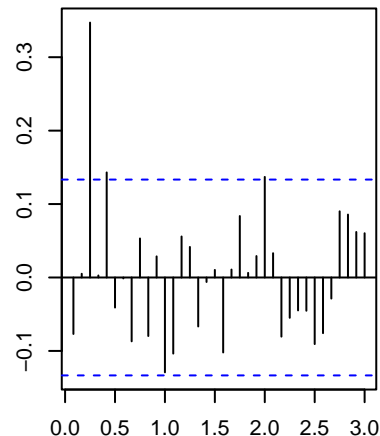
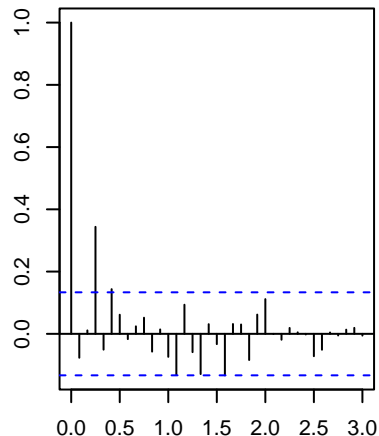
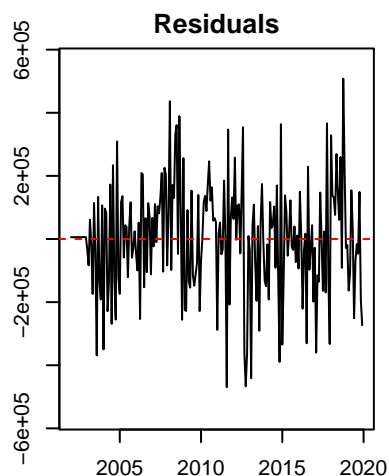
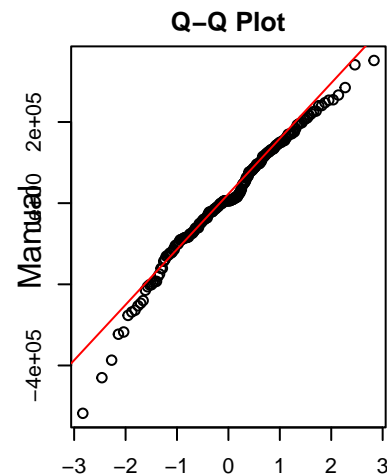
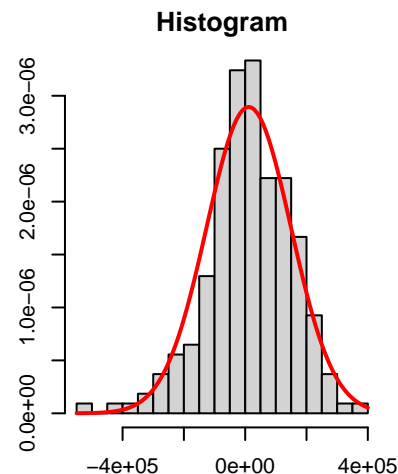
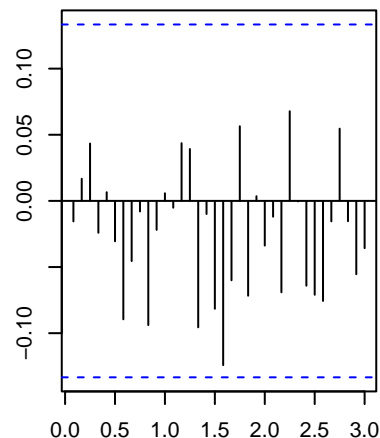
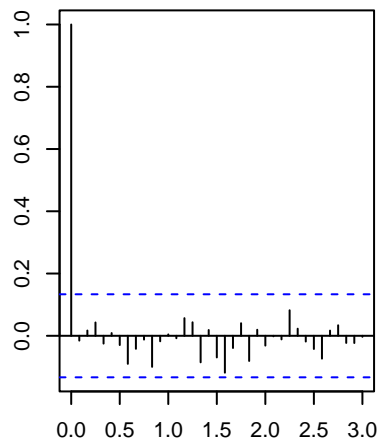
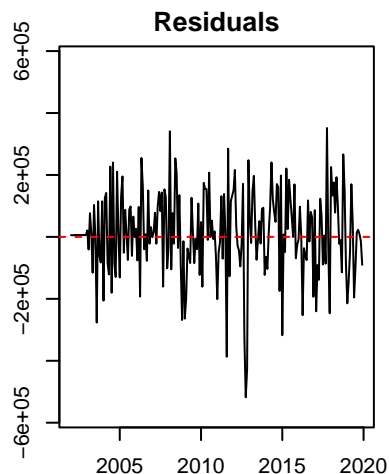


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(3,0,3)x(3,1,3)_1
Ljung-Box Tests:
lag=8: X2=22.18, p=0.0046, FAIL
lag=12: X2=28.58, p=0.00455, FAIL
Normality: W=0.997, p=0.913, PASS (normal)
QCH test: X2=20.33, p=0.0611, PASS (const. vs
quality ratio: 0.083, PASS (no remaining seas

Auto model: Auto: SARIMA(3,0,0)x(0,1,1)_12
Ljung-Box Tests:
lag=5: X2=10.61, p=0.0597, PASS
lag=15: X2=42.06, p=0.00022, FAIL

Enhanced Residual Diagnostics for Jurisdiction 20078

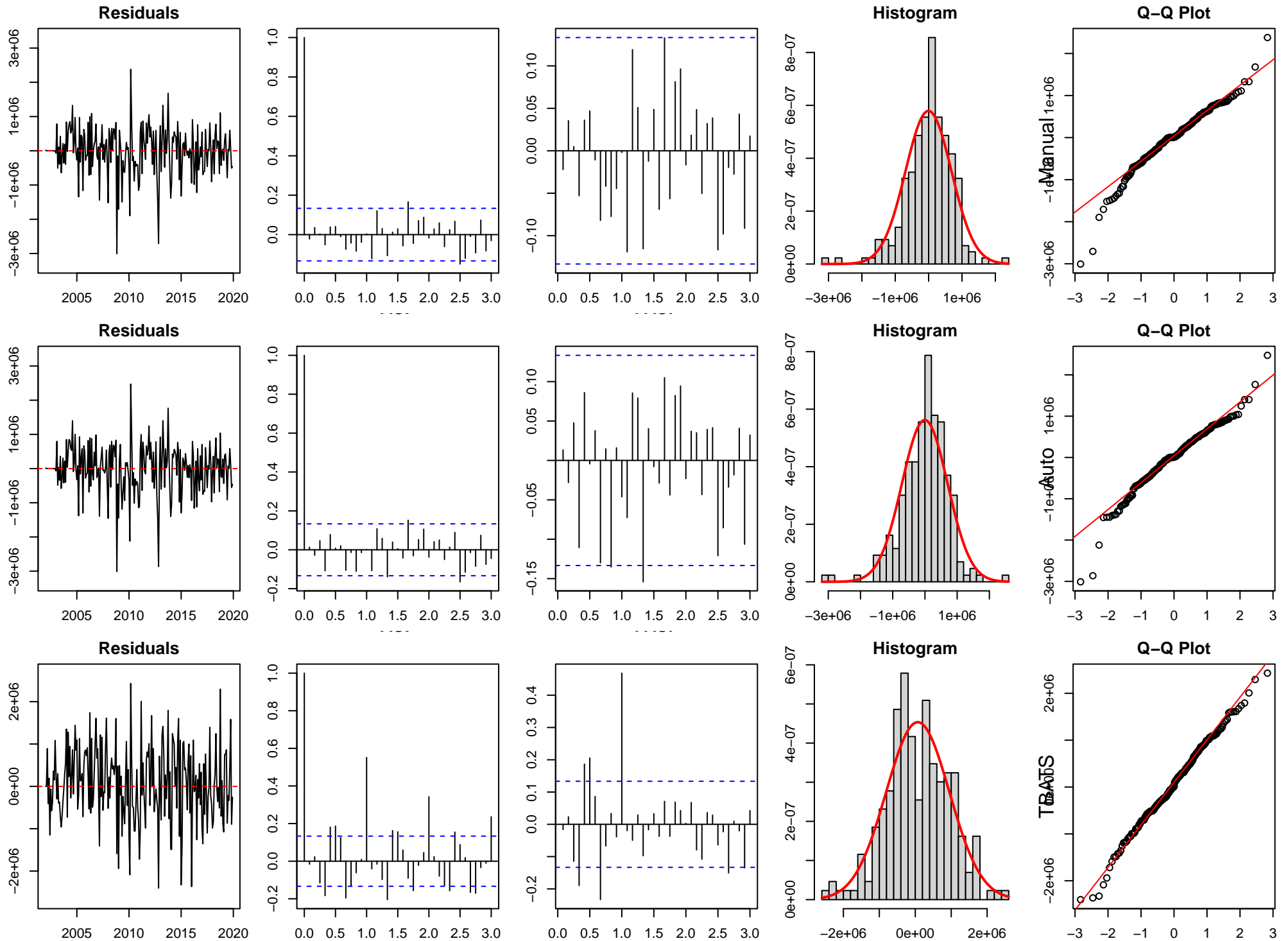


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(3,0,3)×(2,1,3)_1
Ljung-Box Tests:
lag=9: X2=13.37, p=0.147, PASS
lag=13: X2=15.68, p=0.267, PASS
ormality: W=0.981, p=0.00495, FAIL (not norm
H test: X2=39.02, p=0.000105, FAIL (ARCH eff
ality ratio: 0.052, PASS (no remaining seas

Auto model: Auto: SARIMA(1,0,0)×(2,1,2)_12
Ljung-Box Tests:
lag=4: X2=35.03, p=4.57e-07, FAIL
lag=14: X2=52.16, p=2.65e-06, FAIL

Enhanced Residual Diagnostics for Jurisdiction 20080

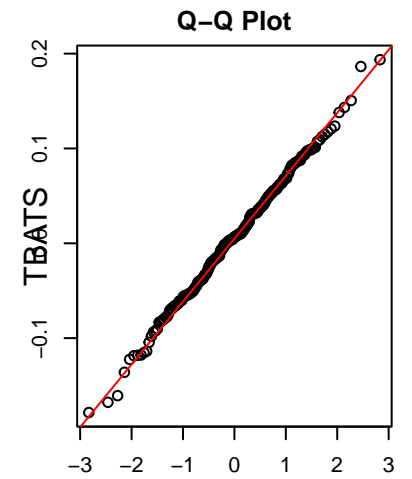
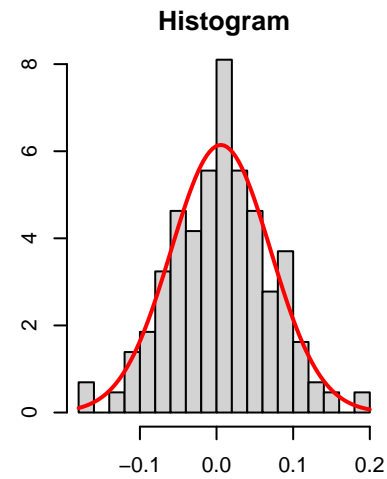
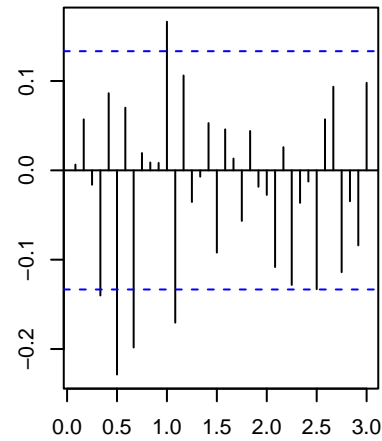
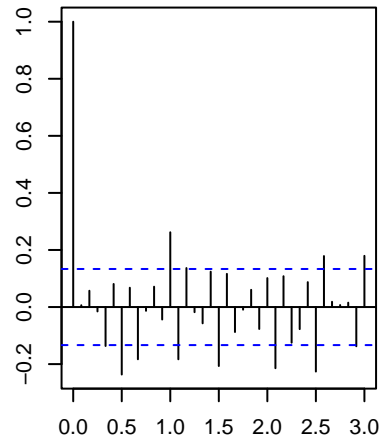
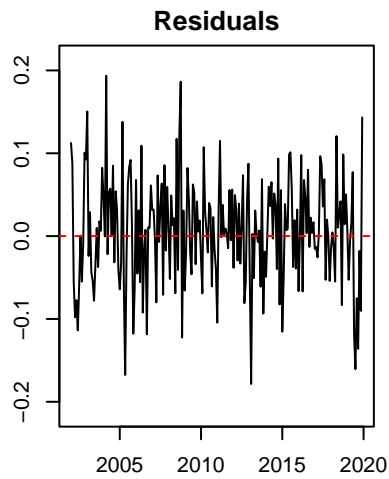
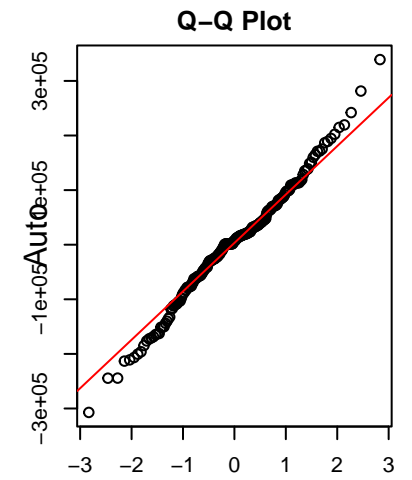
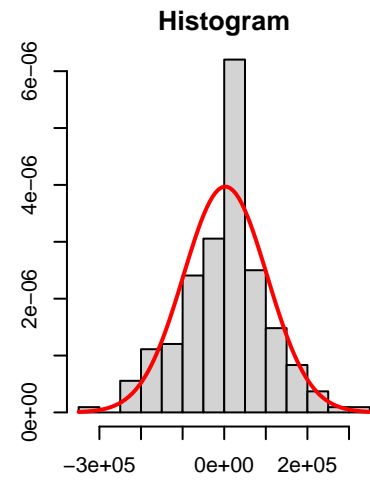
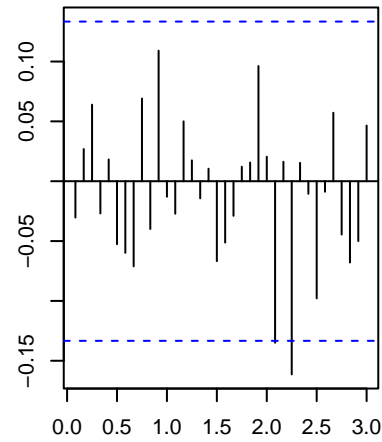
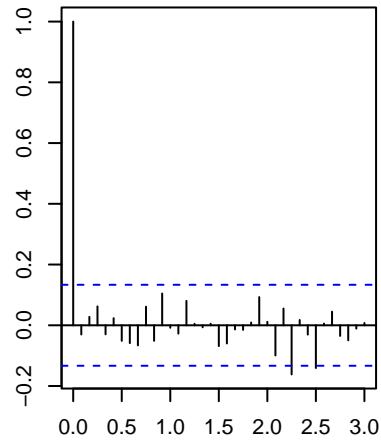
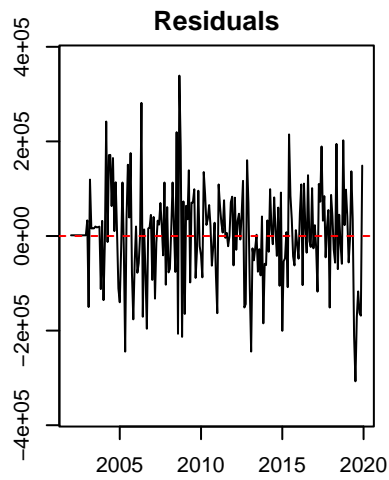
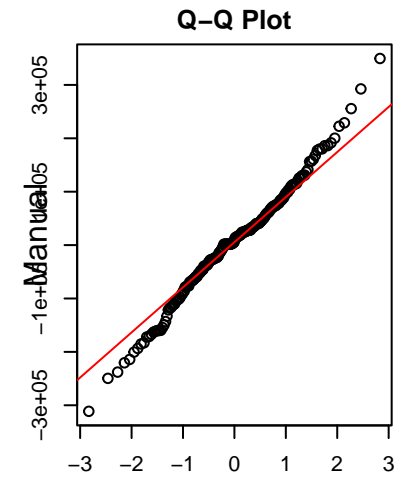
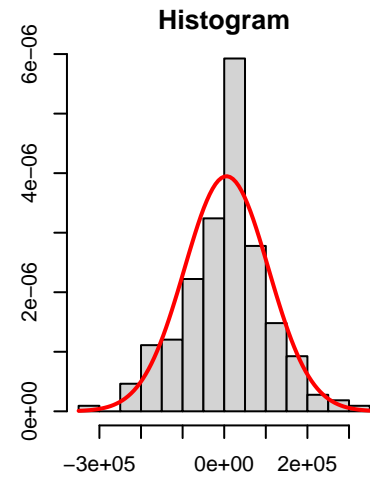
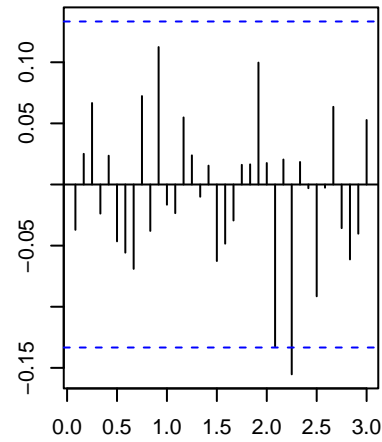
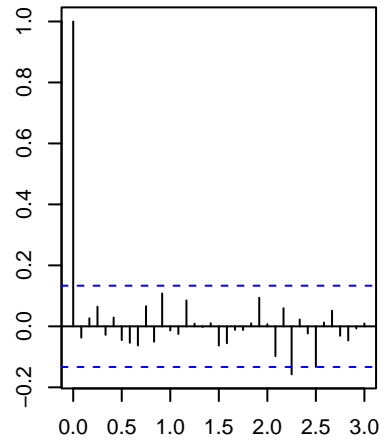
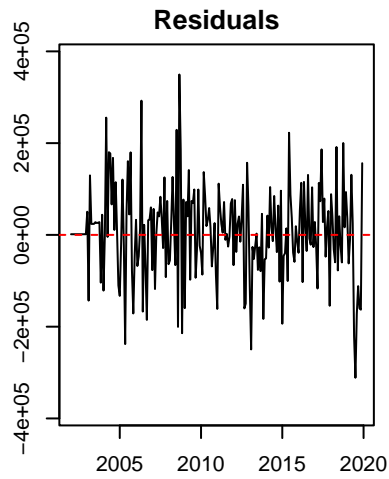


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(1,1,2)×(1,1,1)_1
Ljung-Box Tests:
lag=5: X2=5.00, p=0.416, PASS
lag=15: X2=22.75, p=0.0896, PASS
lag=19: X2=26.41, p=0.119, PASS
normality: W=0.959, p=8.13e-06, FAIL (not normal)
RCH test: X2=10.31, p=0.589, PASS (constant variance)
quality ratio: 0.066, PASS (no remaining seasonality)
CF plots and Ljung-Box tests show conflict in

Auto model: Auto: SARIMA(0,1,1)×(1,1,1)_12
Ljung-Box Tests:

Enhanced Residual Diagnostics for Jurisdiction 2006Z

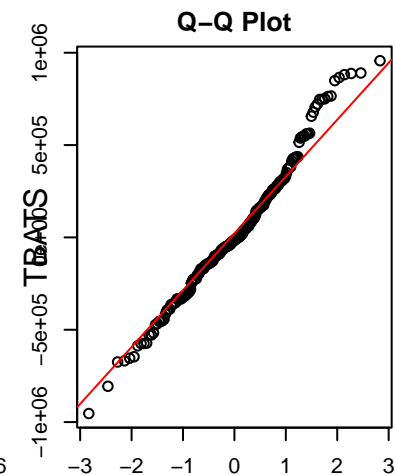
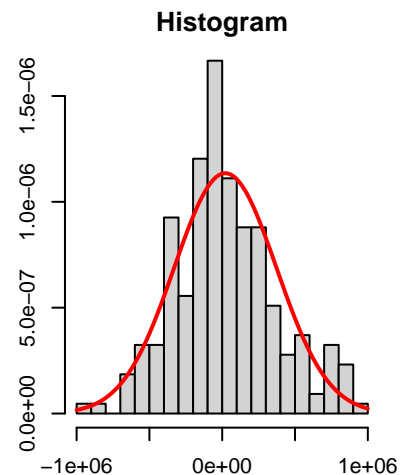
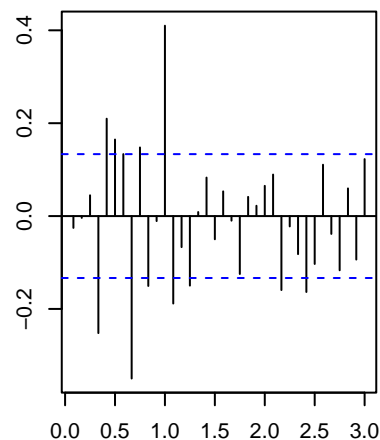
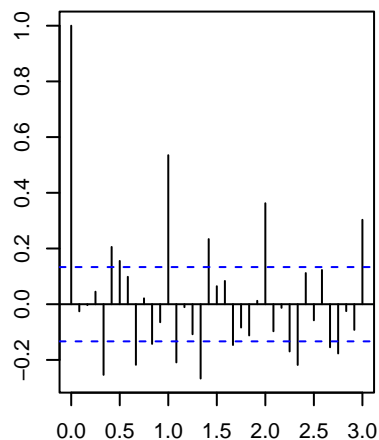
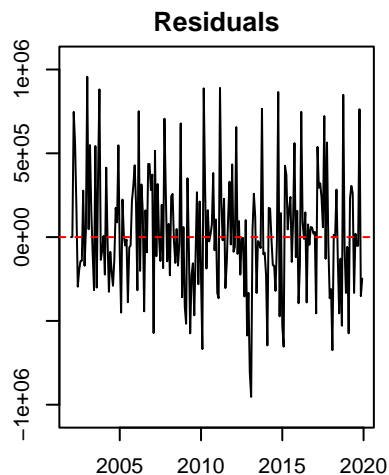
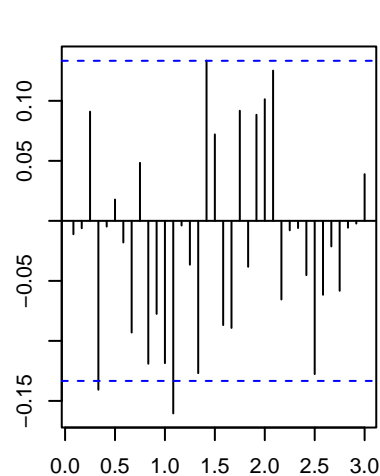
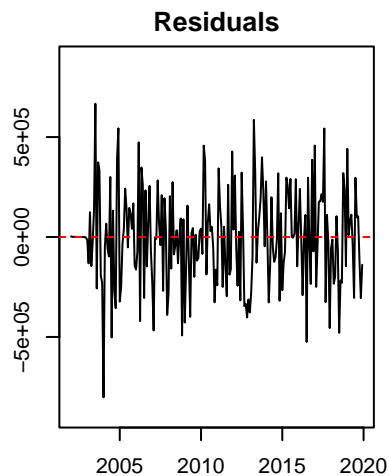
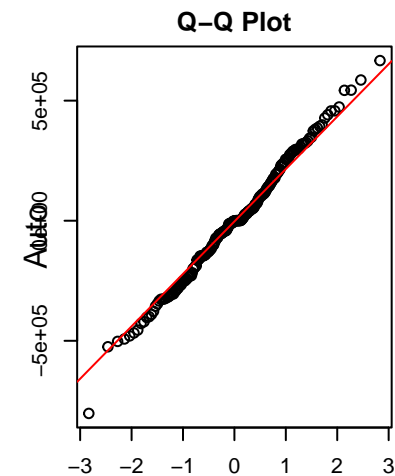
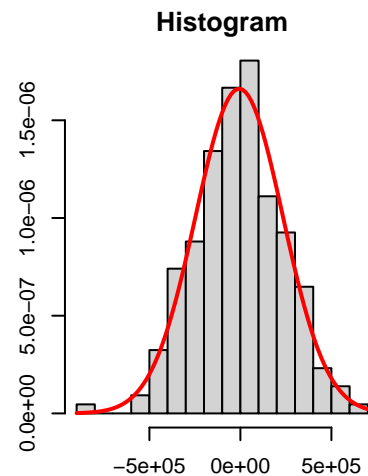
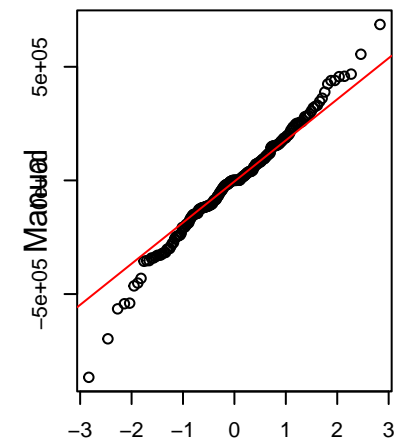
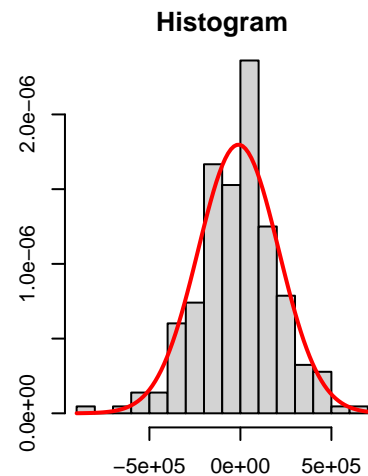
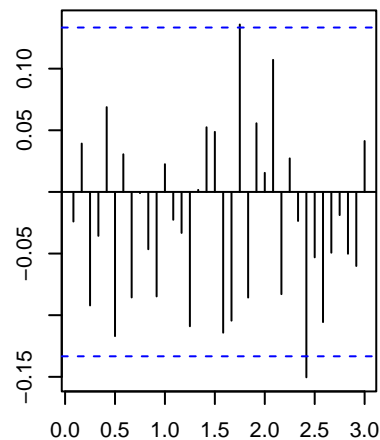
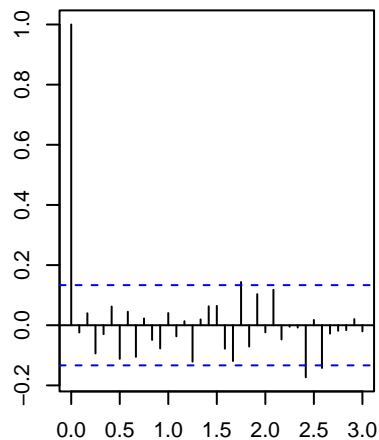
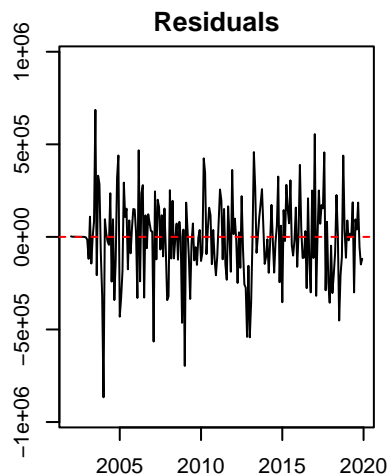


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,0,1)x(1,1,2)_1
Ljung-Box Tests:
lag=4: X2=5.30, p=0.258, PASS
lag=14: X2=11.59, p=0.639, PASS
lag=18: X2=13.80, p=0.742, PASS
Normality: W=0.989, p=0.109, PASS (normal)
BH test: X2=28.60, p=0.00451, FAIL (ARCH effect)
sonality ratio: 0.101, FAIL (seasonality removed)
CF plots and Ljung-Box tests show conflict

Auto model: Auto: SARIMA(1,0,0)x(1,1,2)_12
Ljung-Box Tests:

Enhanced Residual Diagnostics for Jurisdiction 20098

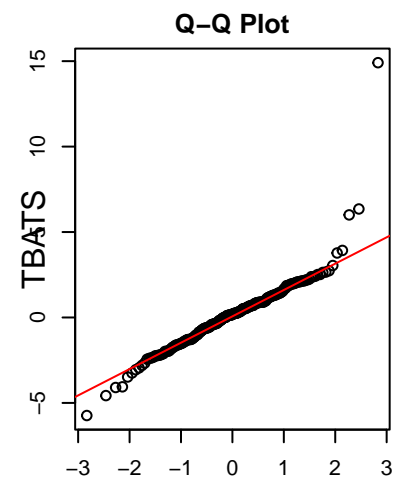
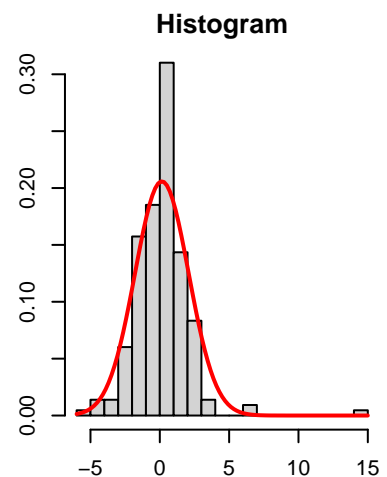
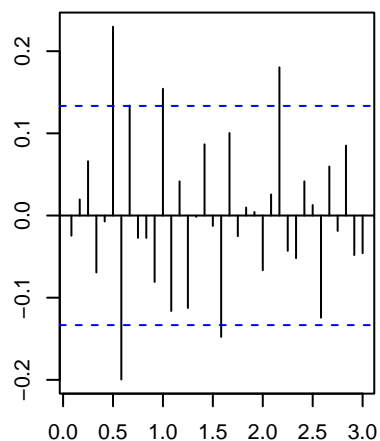
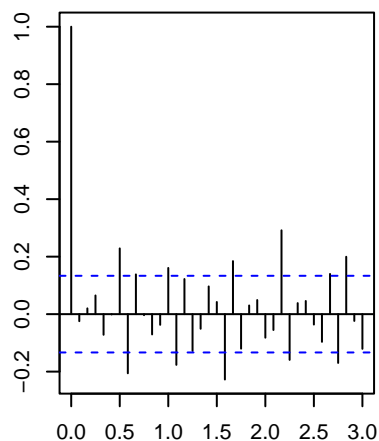
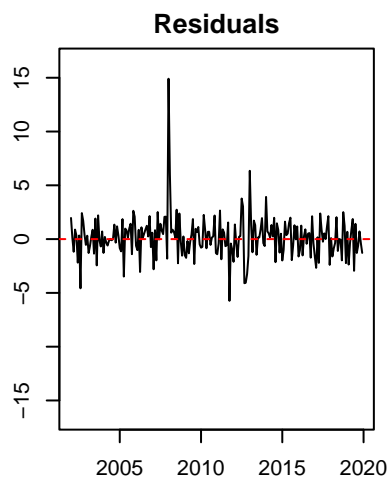
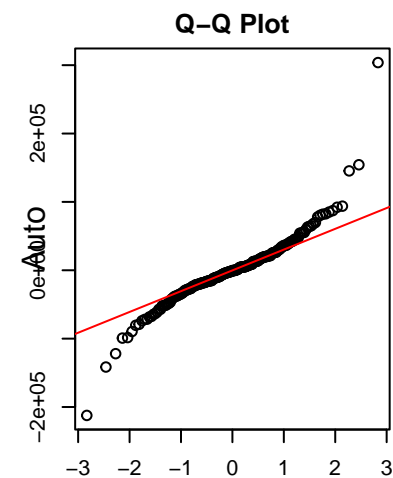
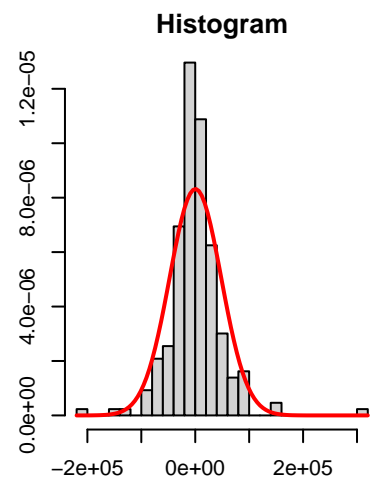
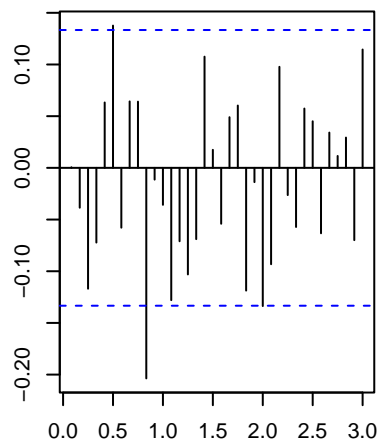
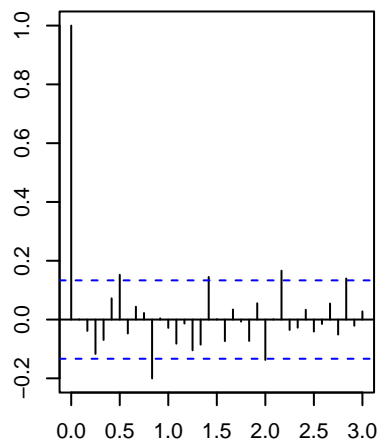
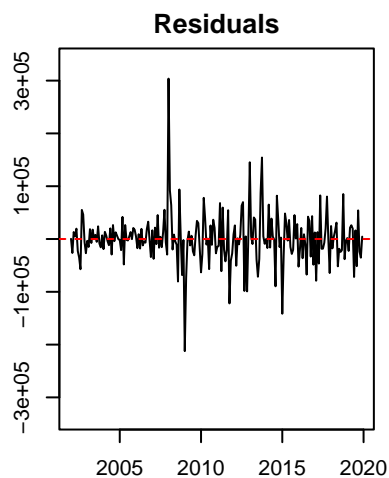
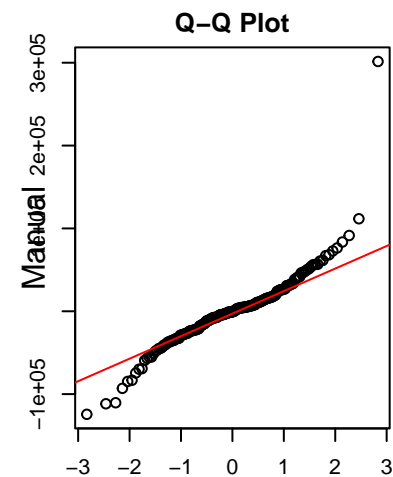
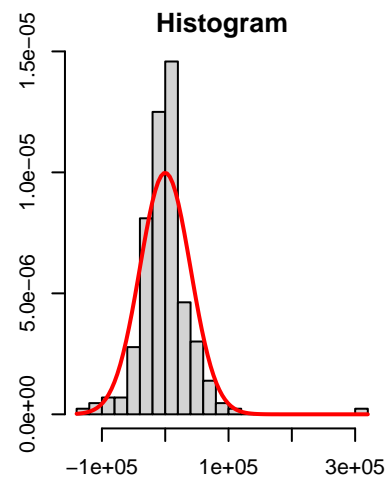
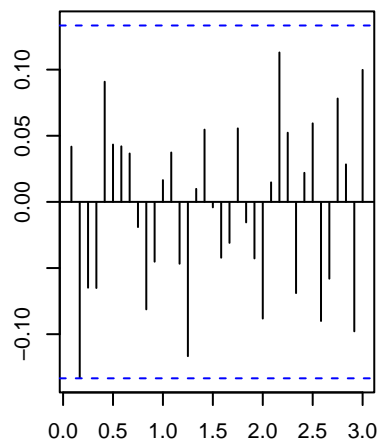
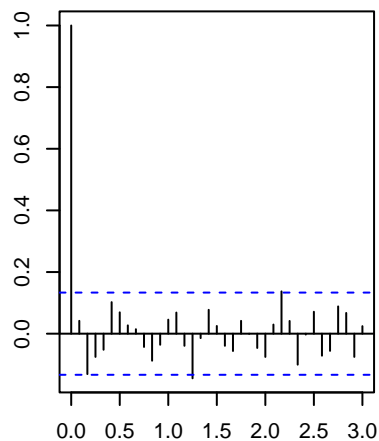
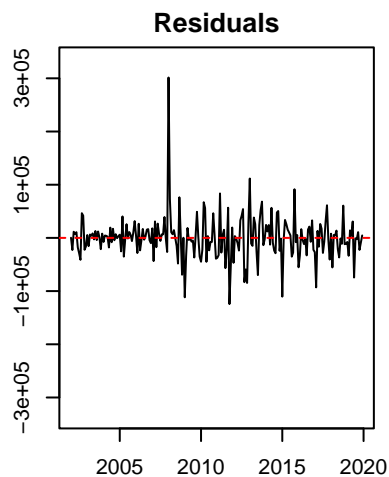


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,3)×(1,1,1)_1
Ljung-Box Tests:
lag=3: X2=9.88, p=0.0196, FAIL
lag=13: X2=22.28, p=0.0511, PASS
lag=17: X2=31.23, p=0.0187, FAIL
Normality: W=0.986, p=0.0351, FAIL (not normal)
RCH test: X2=15.12, p=0.235, PASS (const. variance)
validity ratio: 0.092, PASS (no remaining seasonality)

Auto model: Auto: SARIMA(0,1,1)×(2,1,2)_12
Ljung-Box Tests:
lag=5: X2=12.26, p=0.0314, FAIL

Enhanced Residual Diagnostics for Jurisdiction 20099

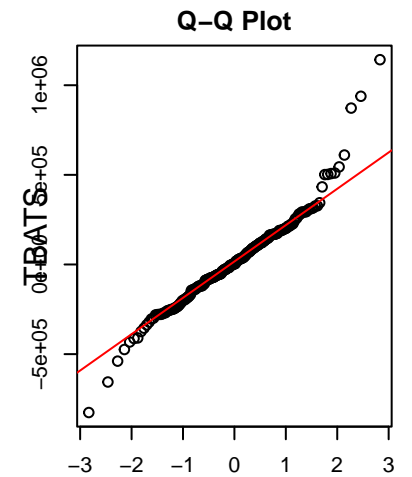
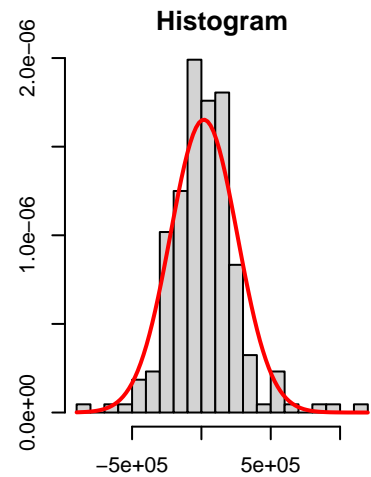
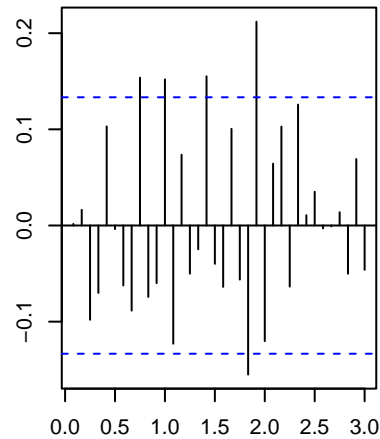
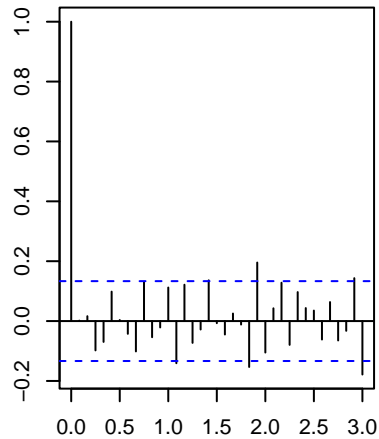
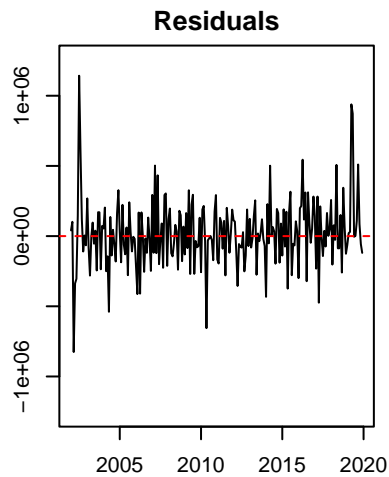
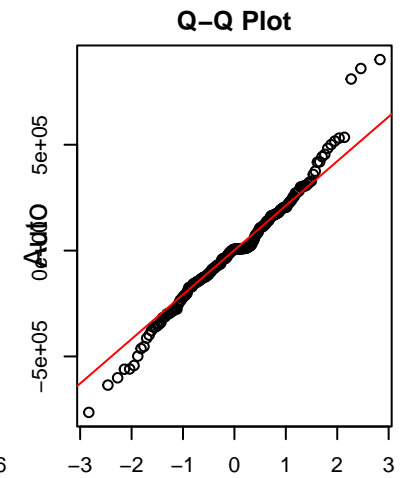
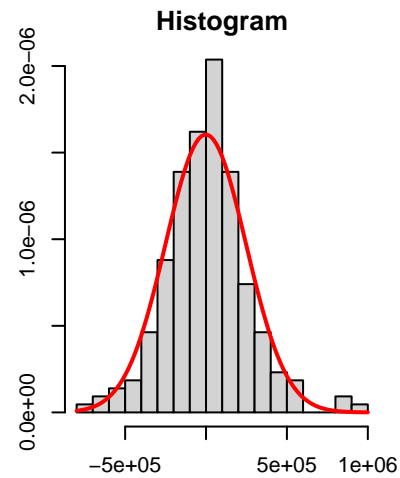
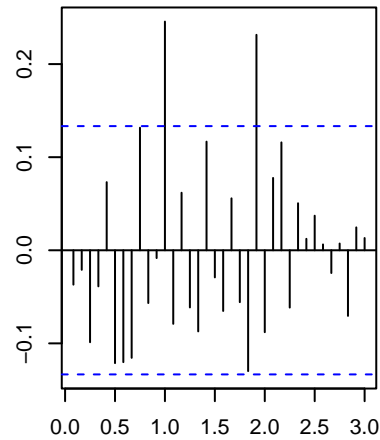
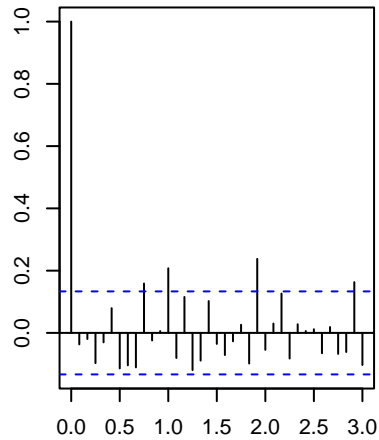
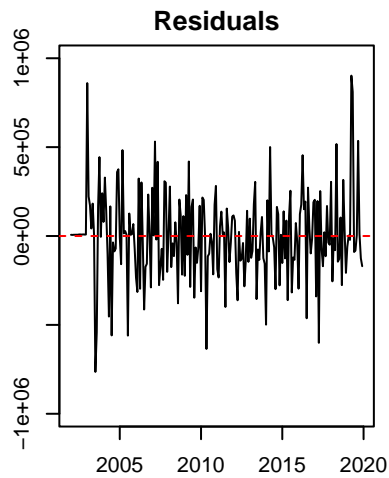
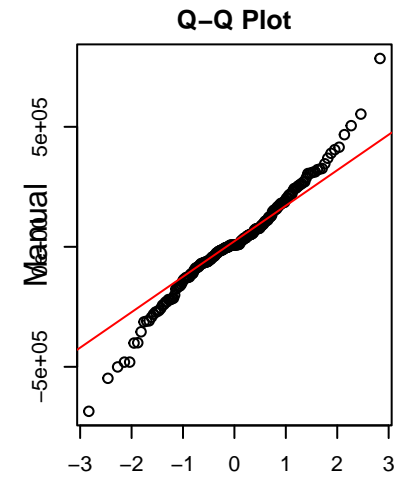
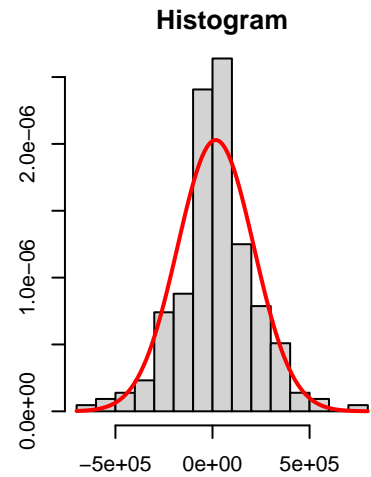
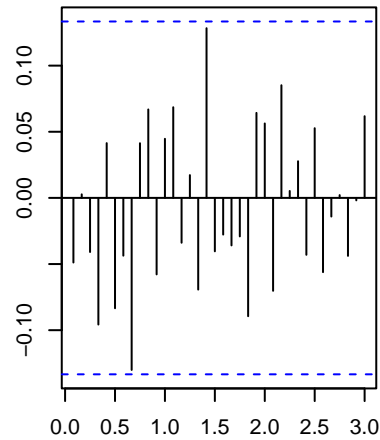
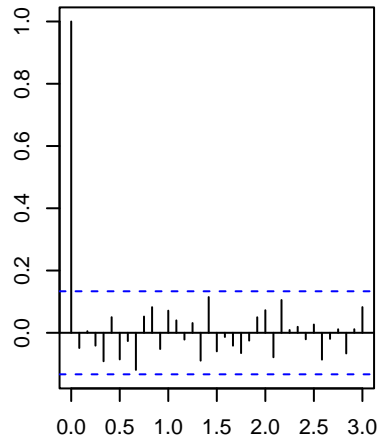
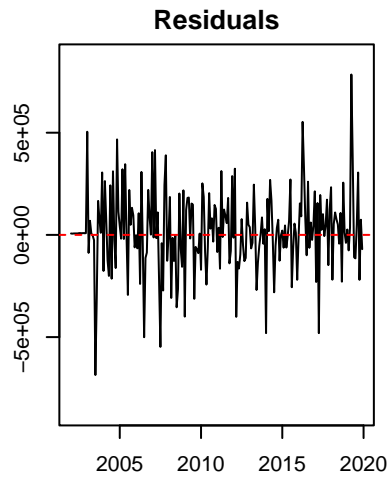


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,3)×(1,0,1)_1
Ljung-Box Tests:
lag=3: X2=11.83, p=0.00799, FAIL
lag=13: X2=21.72, p=0.0599, PASS
lag=17: X2=24.05, p=0.118, PASS
normality: W=0.863, p=5.24e-13, FAIL (not normal)
ARCH test: X2=4.90, p=0.961, PASS (const. variance)
seasonality ratio: 0.115, FAIL (seasonality removed)

Auto model: Auto: SARIMA(2,1,1)×(2,0,0)_12
Ljung-Box Tests:
lag=5: X2=20.99, p=0.000815, FAIL

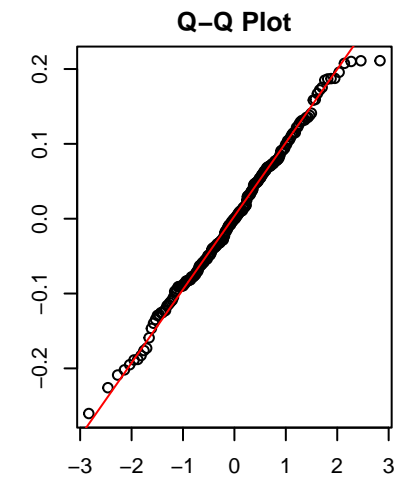
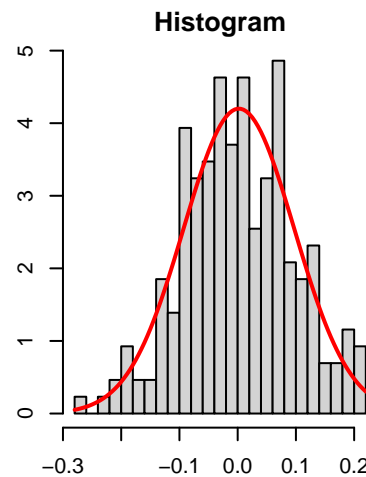
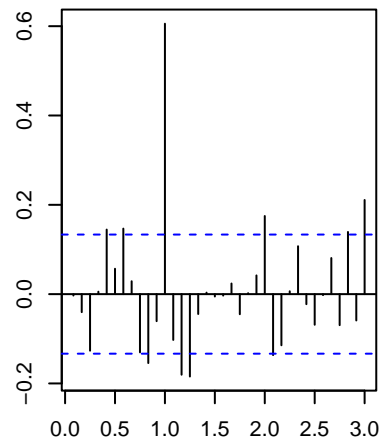
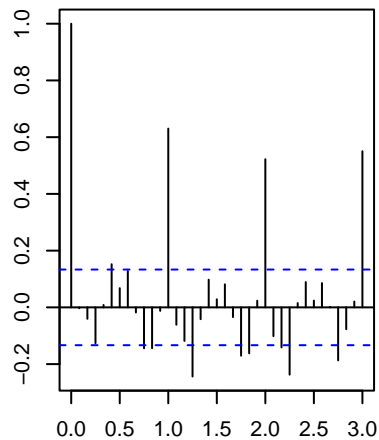
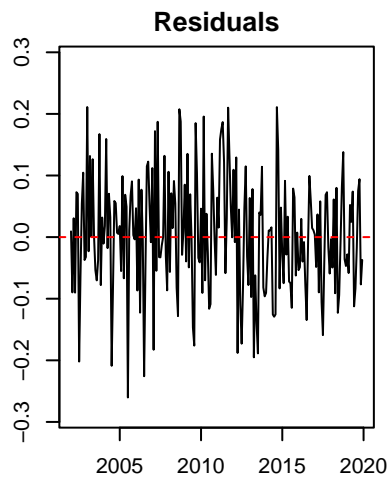
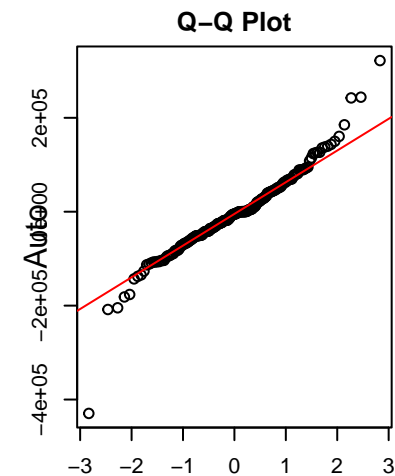
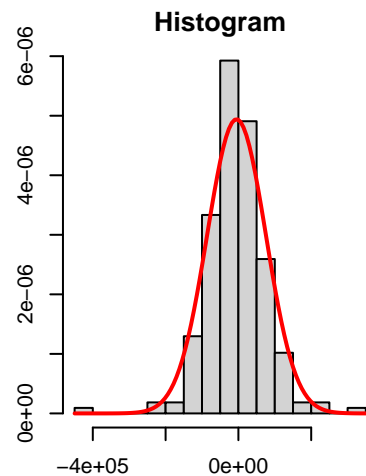
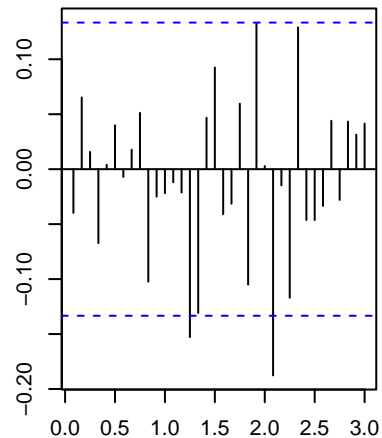
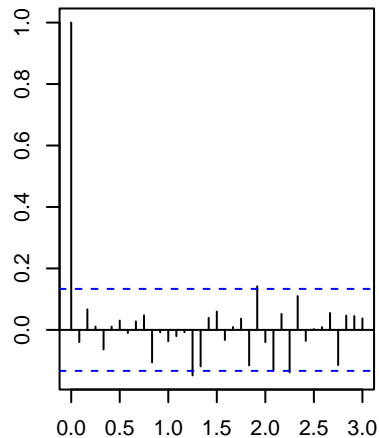
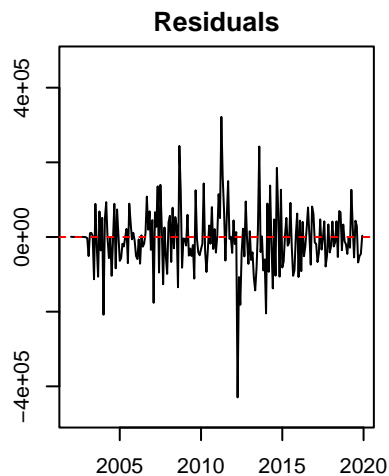
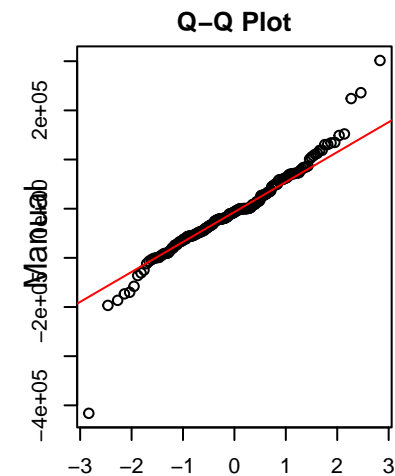
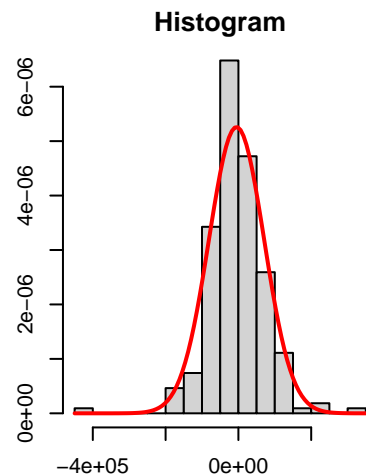
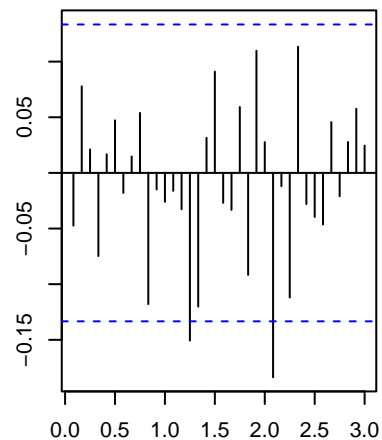
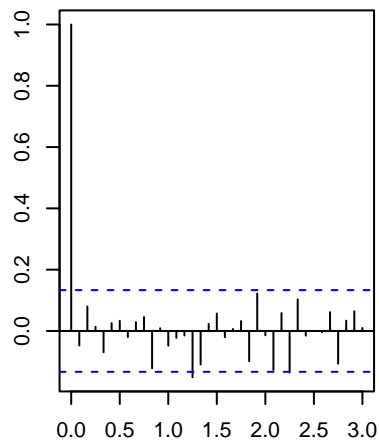
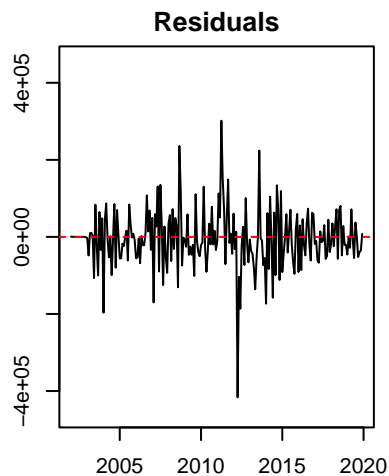
Enhanced Residual Diagnostics for Jurisdiction 20100



MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(1,0,3)x(2,1,3)_1
Ljung-Box Tests:
lag=1: X2=10.50, p=0.0012, FAIL
lag=11: X2=19.29, p=0.0561, PASS
lag=15: X2=22.36, p=0.0986, PASS
ormality: W=0.977, p=0.00127, FAIL (not norm
ARCH test: X2=9.98, p=0.617, PASS (const. var
ality ratio: 0.076, PASS (no remaining seas
CF plots and Ljung-Box tests show conflictin

Auto model: Auto: SARIMA(4,0,0)x(0,1,1)_12
Ljung-Box Tests:



Diag Error

MODEL DIAGNOSTIC RESULTS

Manual model: Manual: SARIMA(0,1,1)x(2,1,3)_1

Ljung-Box Tests:

lag=4: X2=7.54, p=0.11, PASS

lag=14: X2=17.45, p=0.233, PASS

lag=18: X2=23.76, p=0.163, PASS

Normality: W=0.943, p=1.59e-07, FAIL (not norm)

ARCH test: X2=27.95, p=0.00562, FAIL (ARCH effe

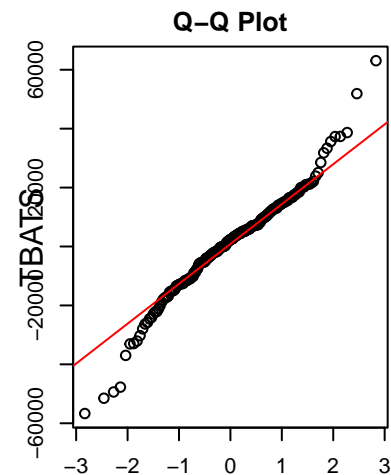
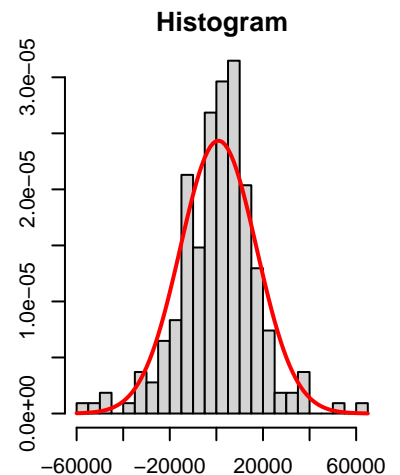
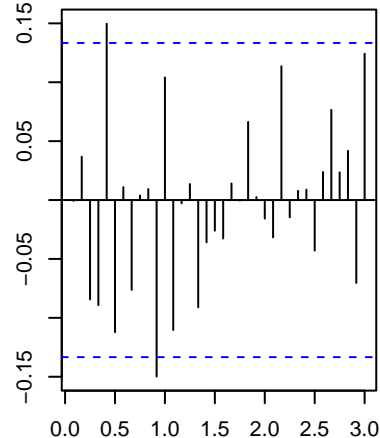
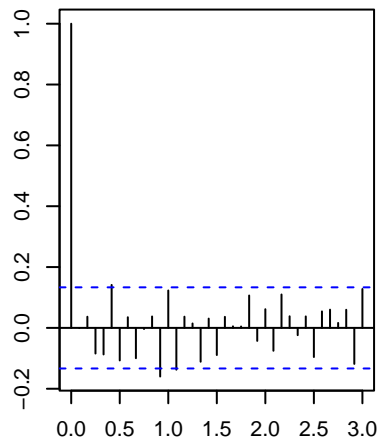
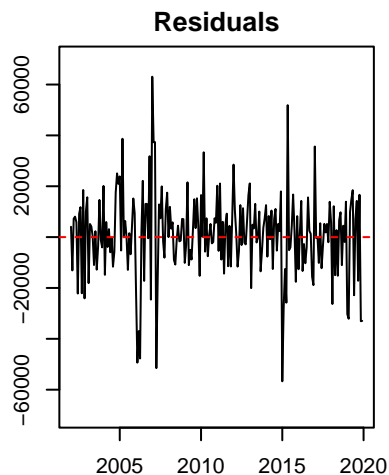
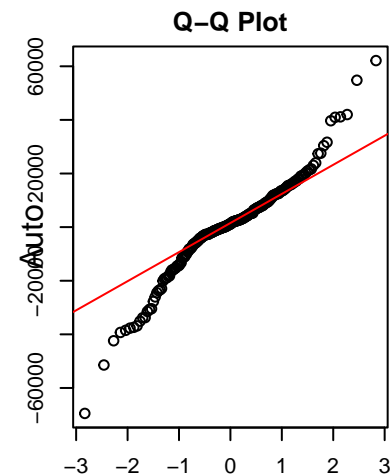
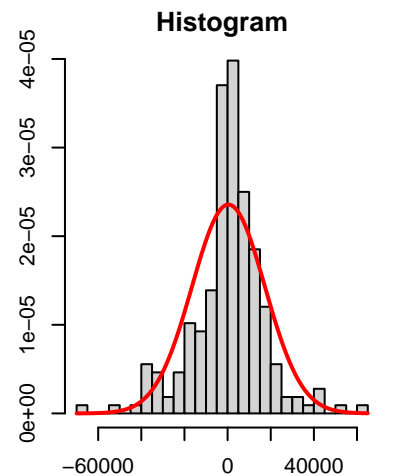
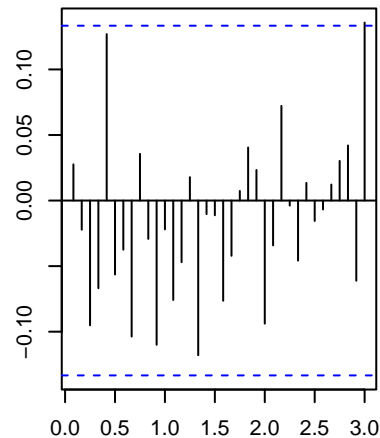
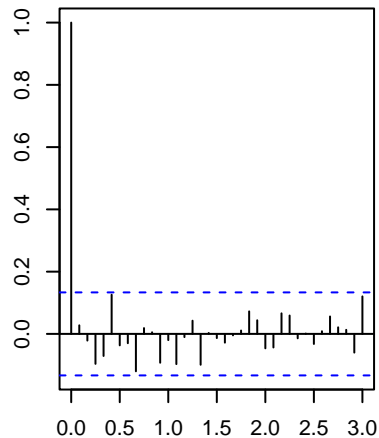
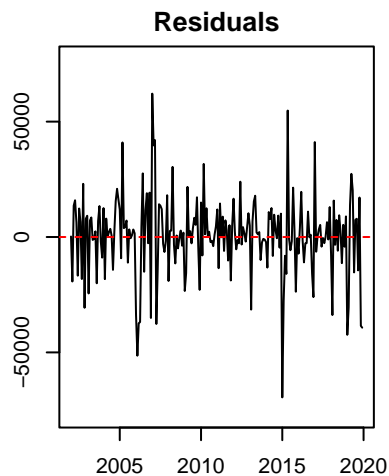
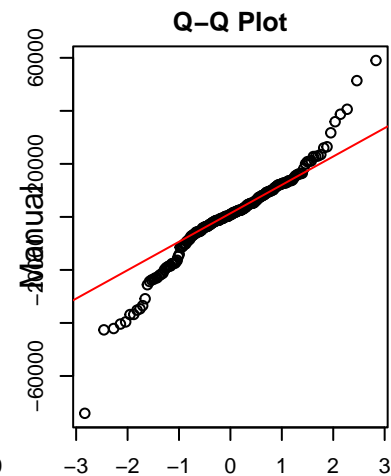
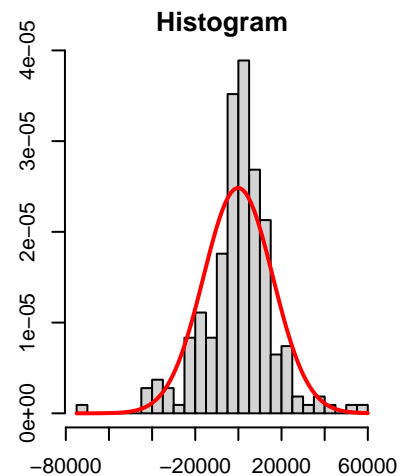
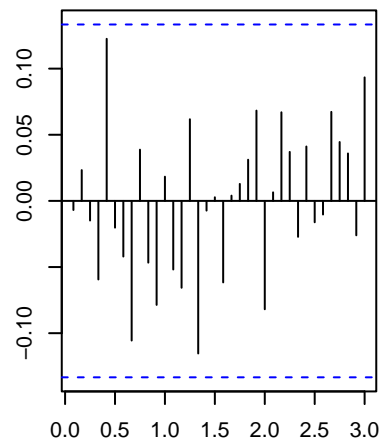
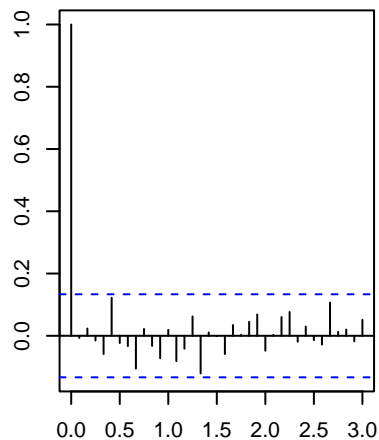
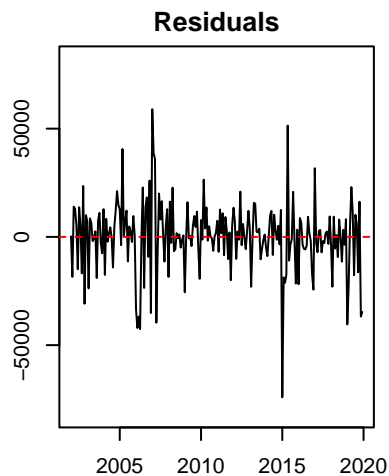
Quality ratio: 0.064, PASS (no remaining seasc

CF plots and Ljung-Box tests show conflictin

Auto model: Auto: SARIMA(0,1,1)x(1,1,2)_12

Ljung-Box Tests:

Enhanced Residual Diagnostics for Jurisdiction 20120

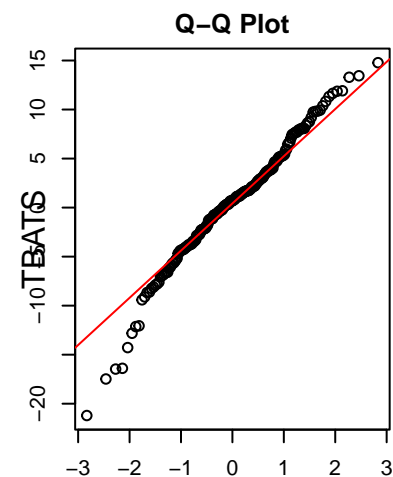
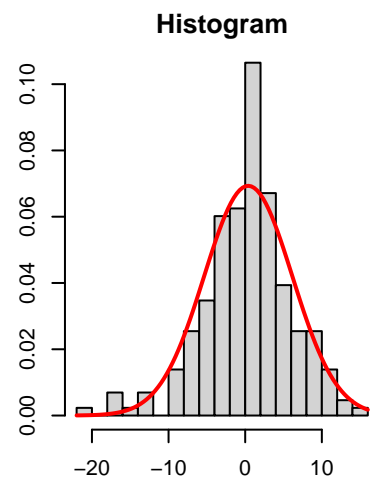
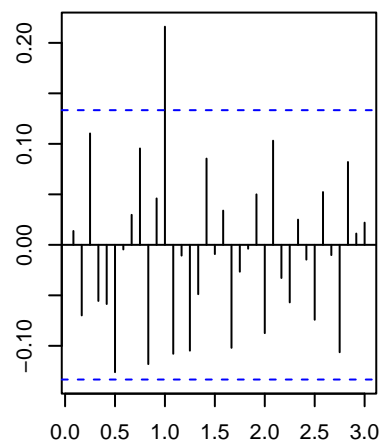
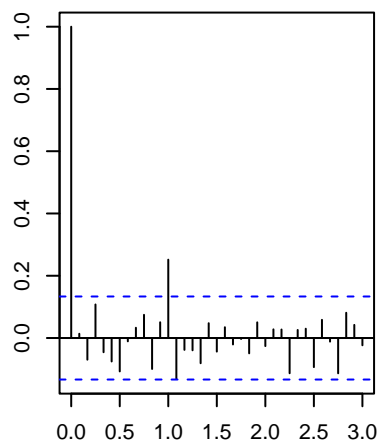
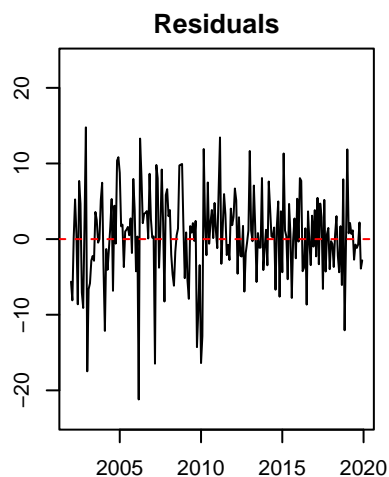
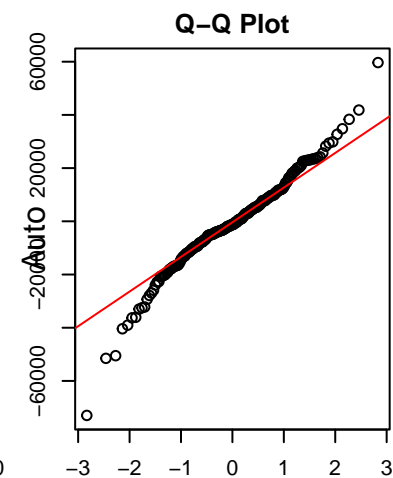
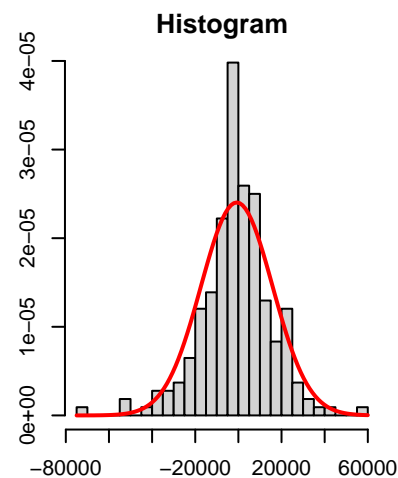
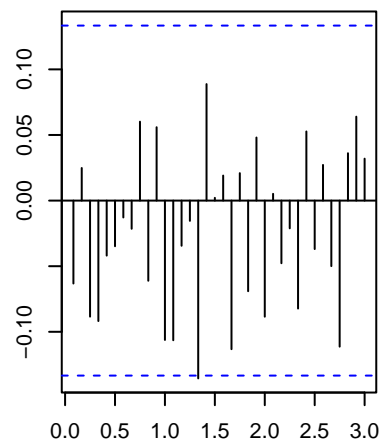
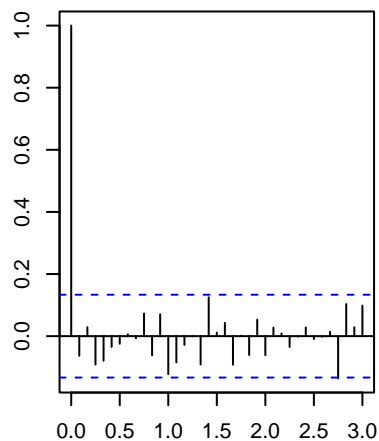
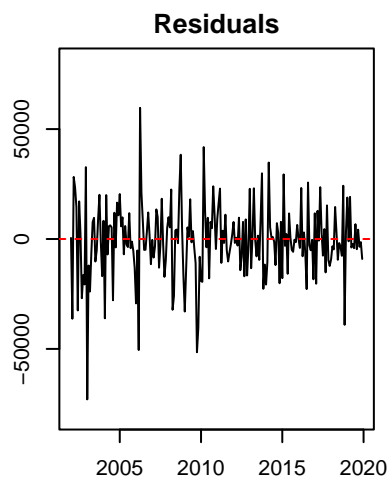
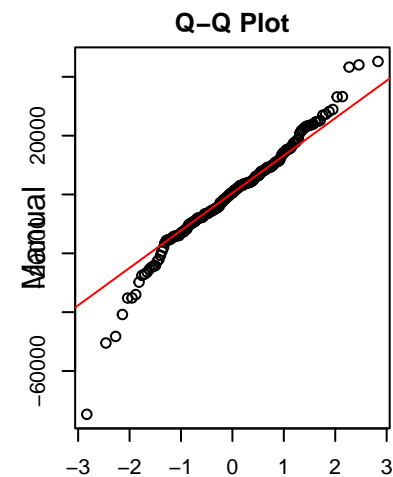
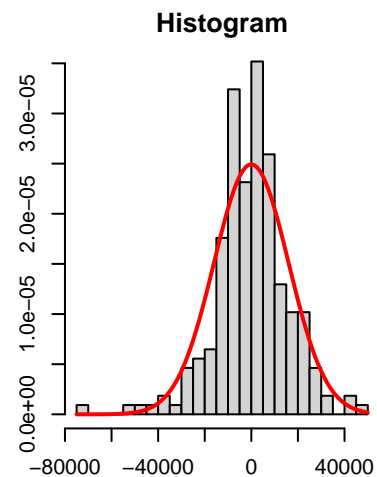
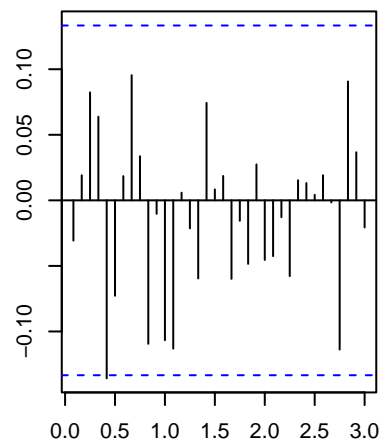
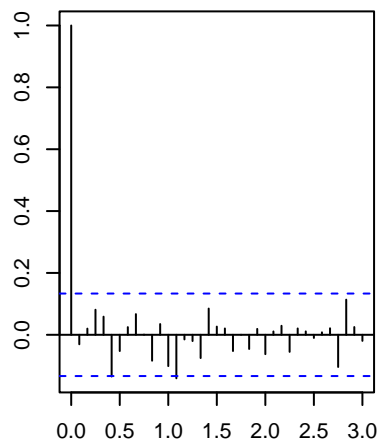
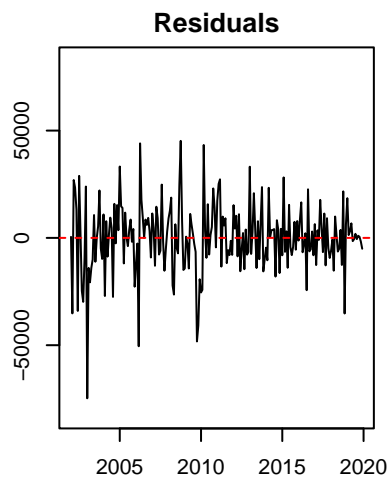


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(1,1,1)×(1,0,1)_1
Ljung-Box Tests:
lag=6: X2=7.50, p=0.277, PASS
lag=16: X2=16.18, p=0.44, PASS
lag=20: X2=18.38, p=0.562, PASS
normality: W=0.945, p=2.89e-07, FAIL (not normal)
H test: X2=47.64, p=3.61e-06, FAIL (ARCH effect)
quality ratio: 0.058, PASS (no remaining seasonality)

Auto model: Auto: SARIMA(0,1,1)×(2,0,0)_12
Ljung-Box Tests:
lag=7: X2=10.83, p=0.146, PASS

Enhanced Residual Diagnostics for Jurisdiction 20128

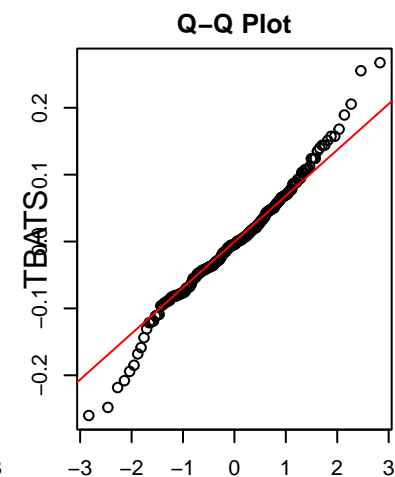
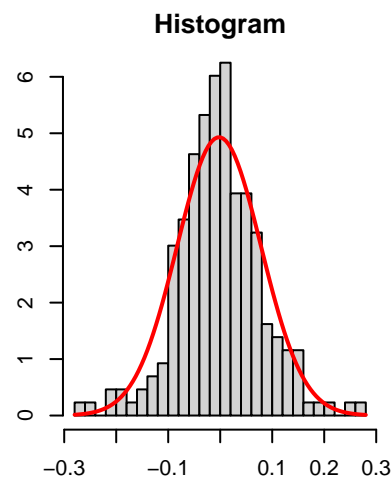
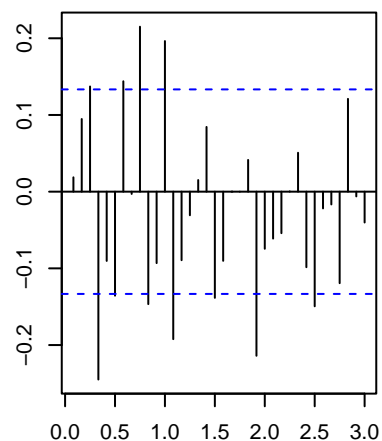
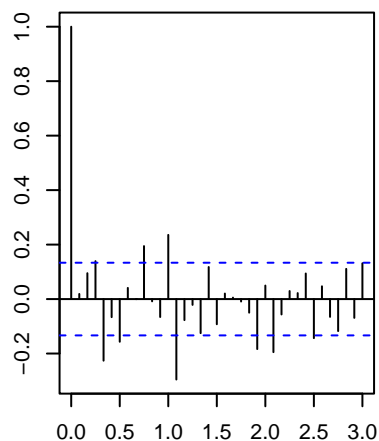
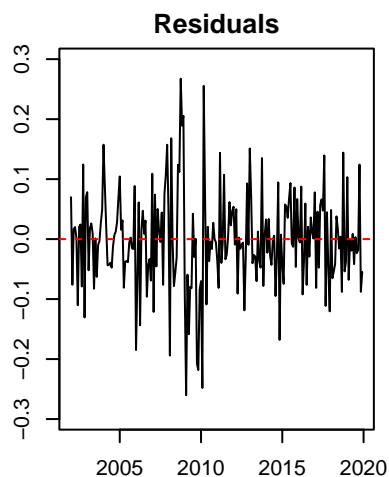
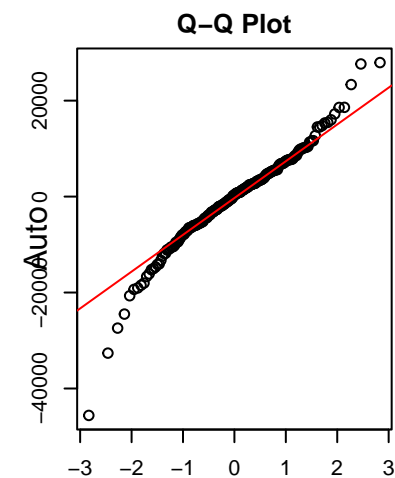
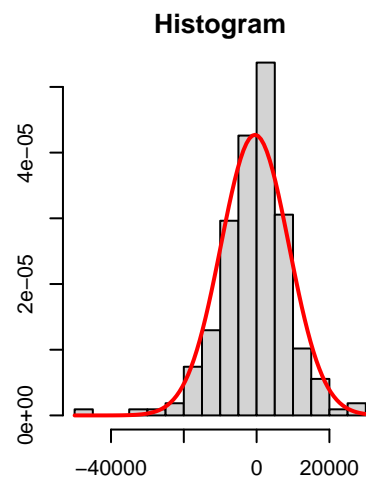
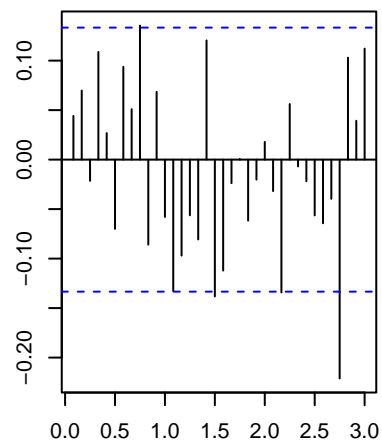
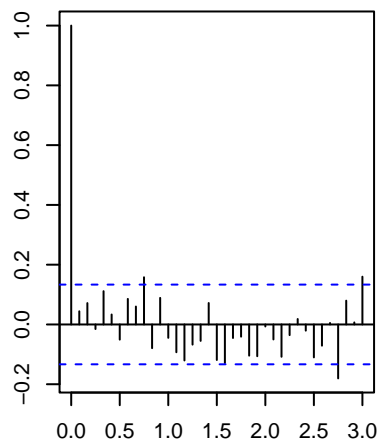
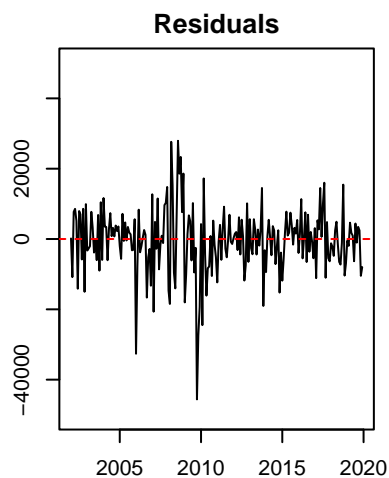
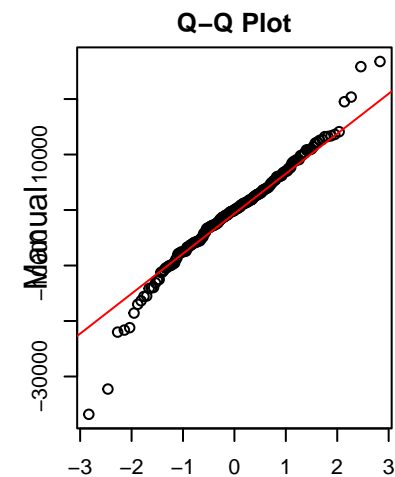
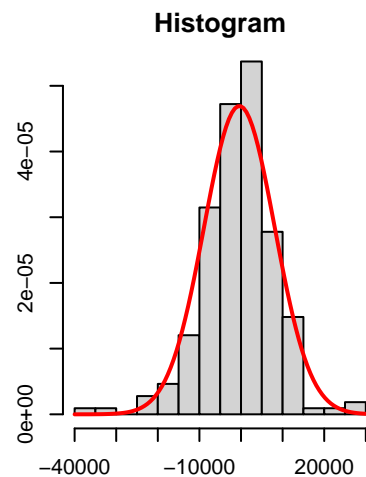
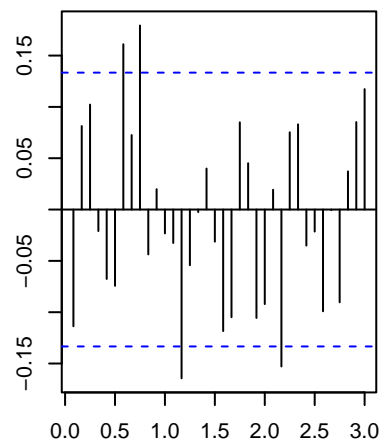
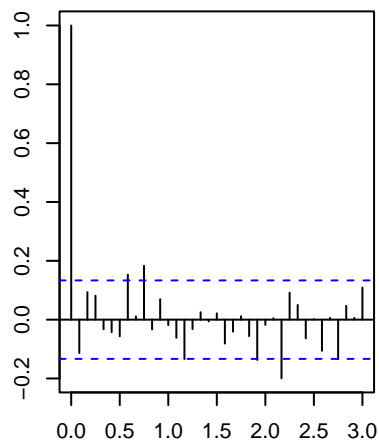
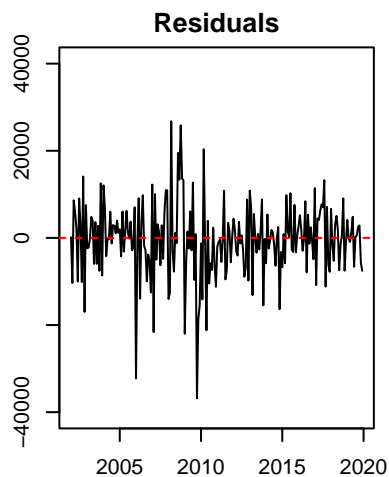


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(1,1,2)x(1,0,2)_1
Ljung-Box Tests:
lag=4: X2=9.95, p=0.0413, FAIL
lag=14: X2=21.29, p=0.0944, PASS
lag=18: X2=22.85, p=0.196, PASS
normality: W=0.966, p=4.99e-05, FAIL (not normal)
RCH test: X2=13.05, p=0.365, PASS (constant variance)
validity ratio: 0.032, PASS (no remaining seasonality)

Auto model: Auto: SARIMA(2,1,2)x(1,0,0)_12
Ljung-Box Tests:
lag=5: X2=6.80, p=0.236, PASS

Enhanced Residual Diagnostics for Jurisdiction 20163

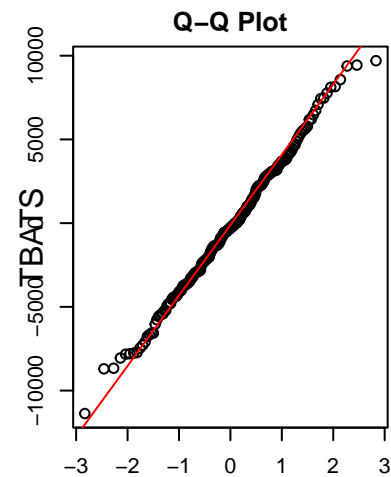
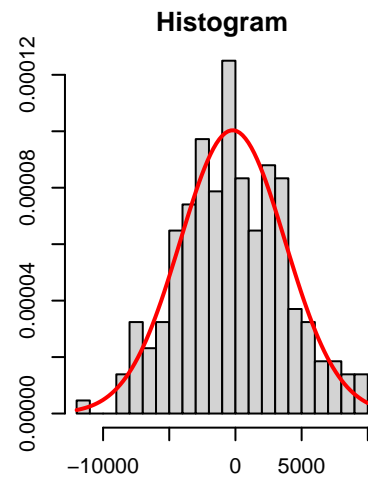
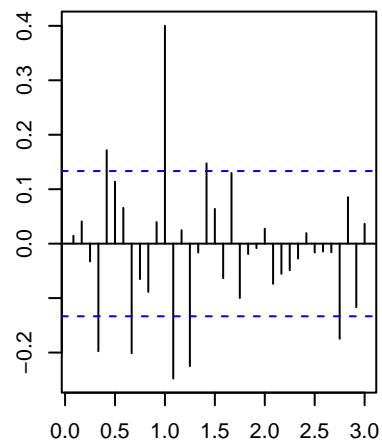
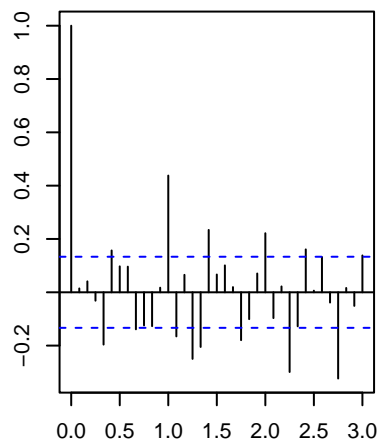
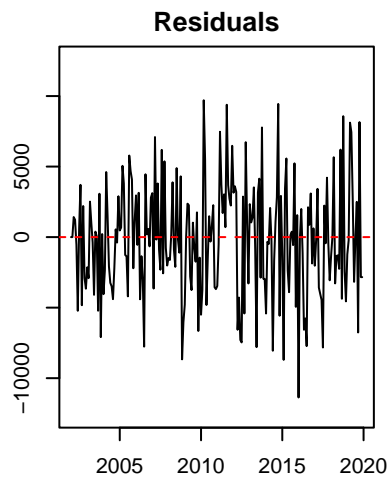
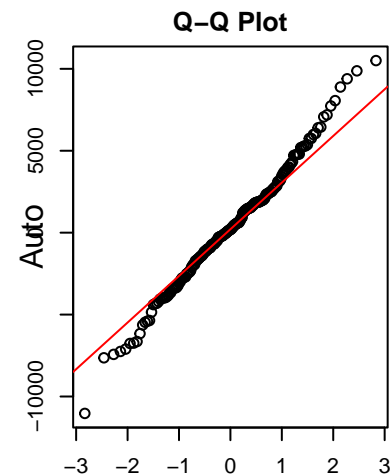
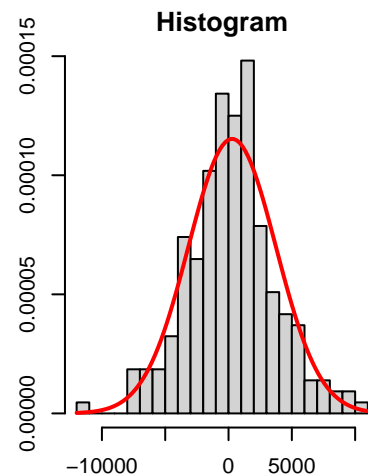
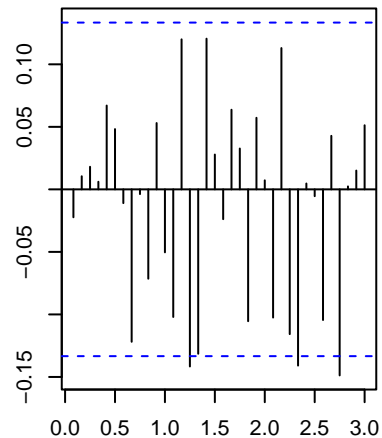
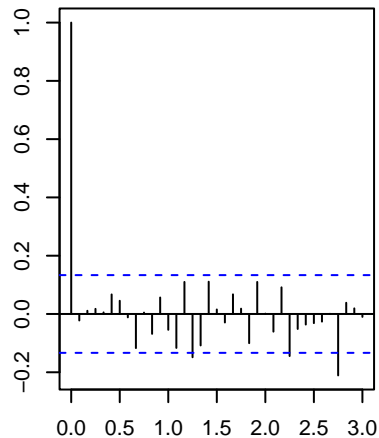
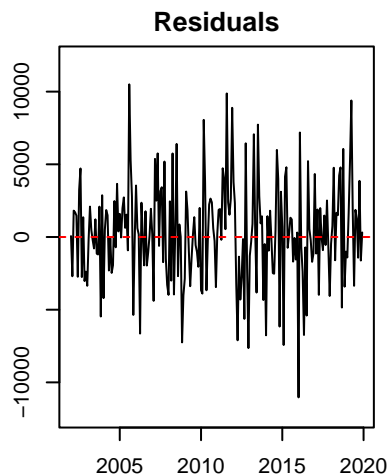
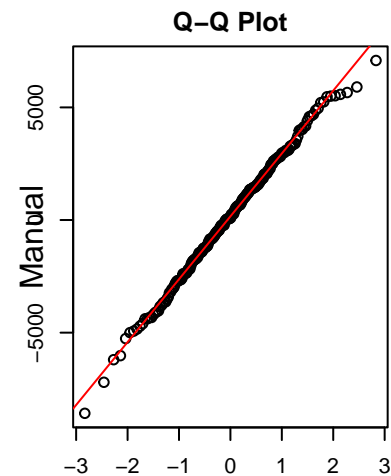
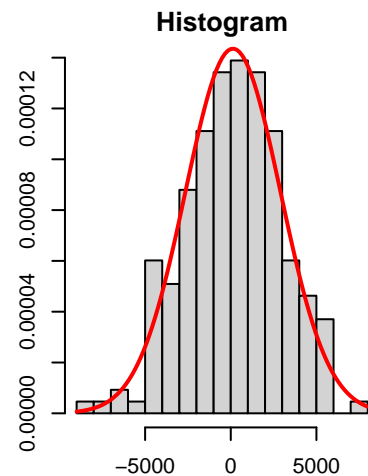
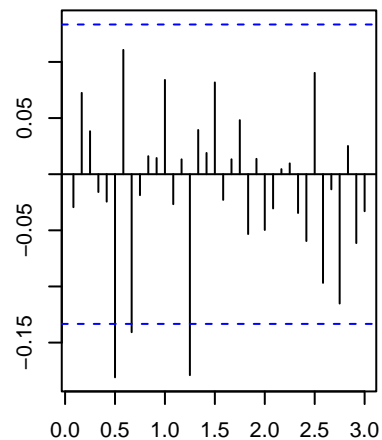
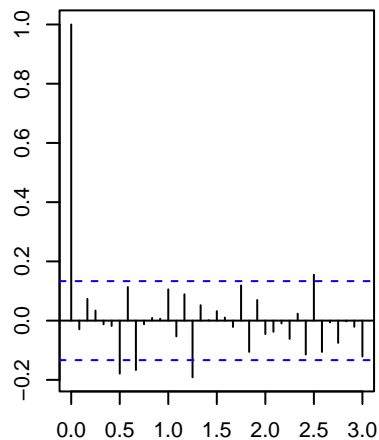
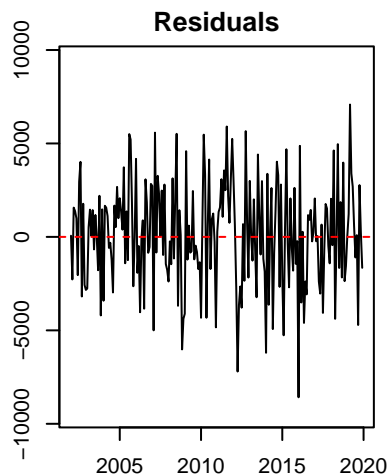


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(3,1,3)×(3,0,1)_1
Ljung-Box Tests:
lag=10: X2=29.52, p=0.00103, FAIL
lag=14: X2=34.97, p=0.00149, FAIL
normality: W=0.968, p=7.99e-05, FAIL (not norm
H test: X2=39.19, p=9.79e-05, FAIL (ARCH eff
quality ratio: 0.049, PASS (no remaining seas

Auto model: Auto: SARIMA(0,1,4)×(1,0,0)_12
Ljung-Box Tests:
lag=5: X2=14.78, p=0.0114, FAIL
lag=15: X2=33.28, p=0.0043, FAIL

Enhanced Residual Diagnostics for Jurisdiction 30002

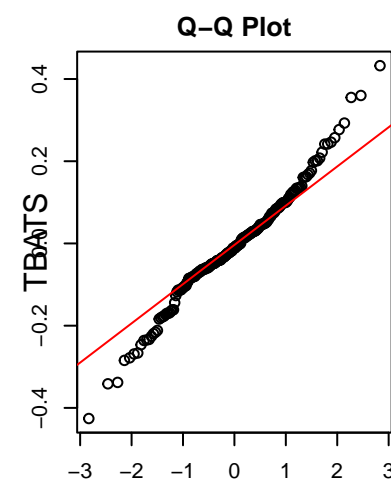
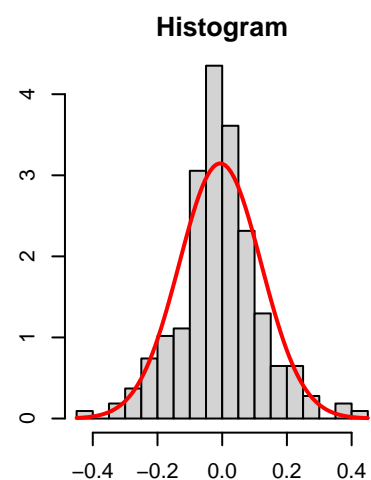
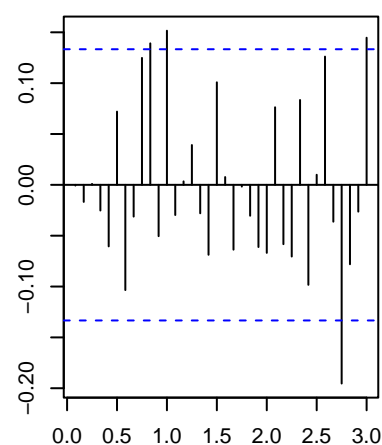
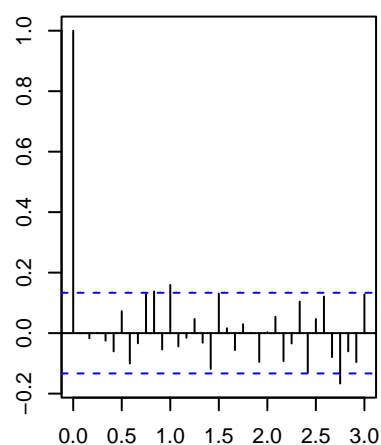
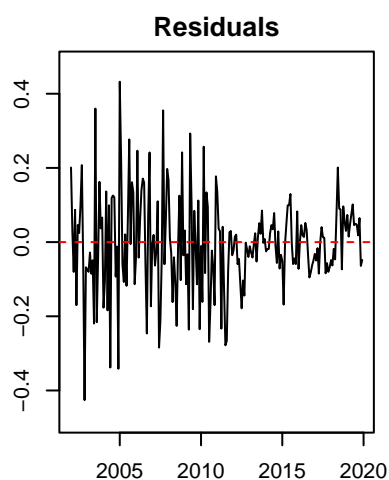
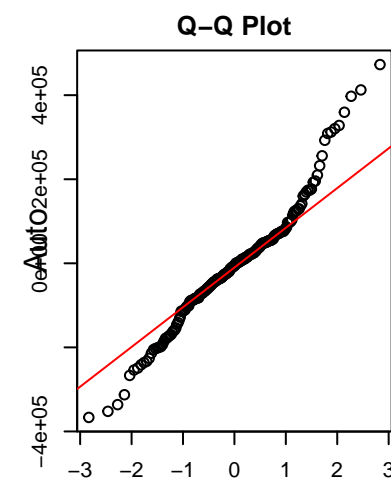
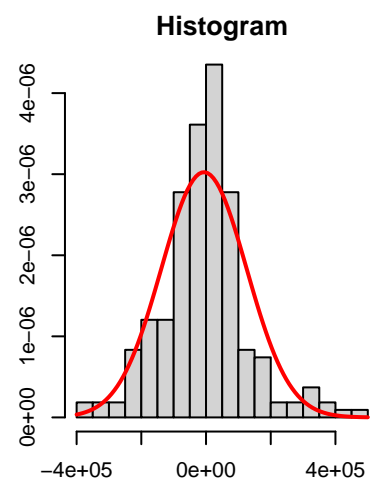
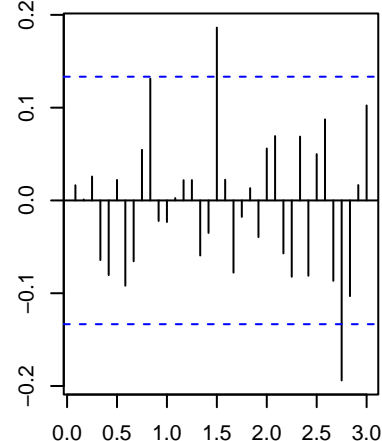
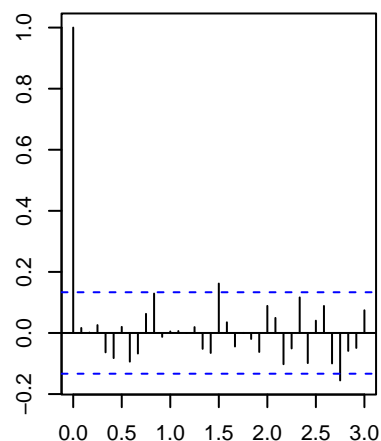
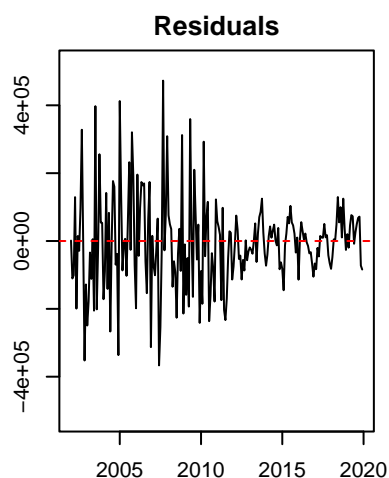
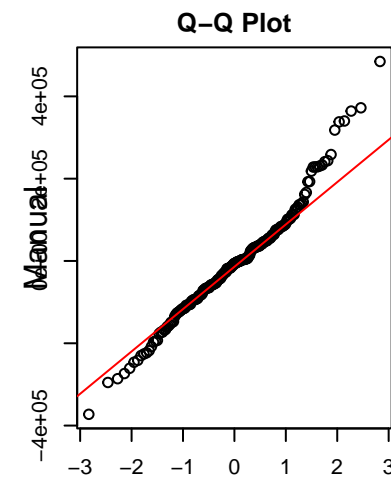
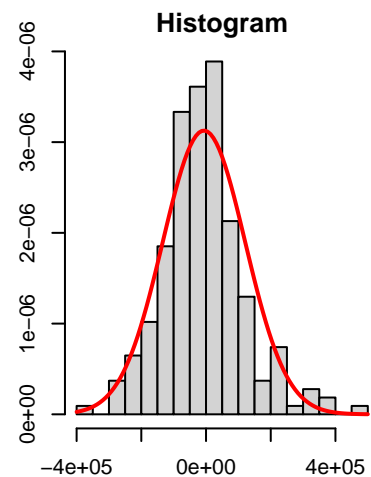
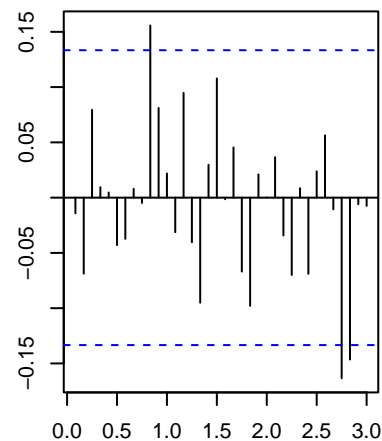
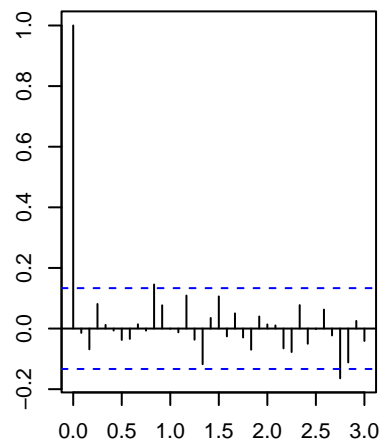
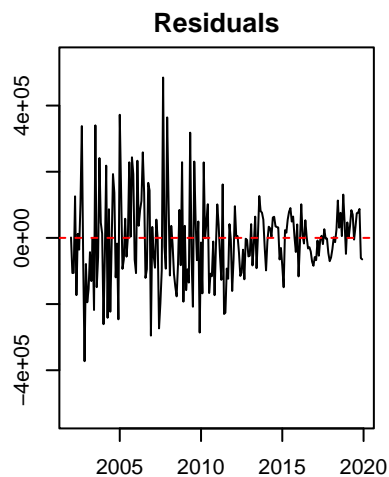


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(3,1,3)×(1,0,1)_1
Ljung-Box Tests:
lag=2: X2=18.16, p=0.000114, FAIL
lag=12: X2=32.85, p=0.00102, FAIL
lag=16: X2=40.65, p=0.000624, FAIL
Normality: W=0.996, p=0.885, PASS (normal)
ARCH test: X2=8.68, p=0.73, PASS (const. var
ality ratio: 0.096, PASS (no remaining seas

Auto model: Auto: SARIMA(0,1,4)×(1,0,0)_12
Ljung-Box Tests:
laq=5: X2=5.88, p=0.318, PASS

Enhanced Residual Diagnostics for Jurisdiction 50000

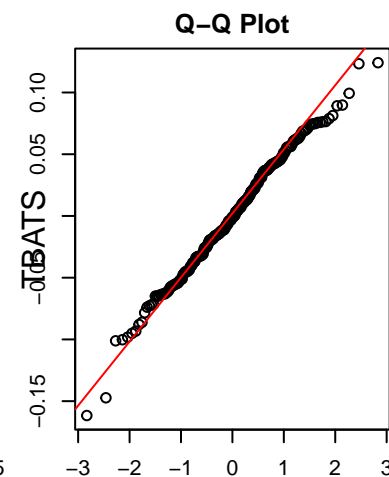
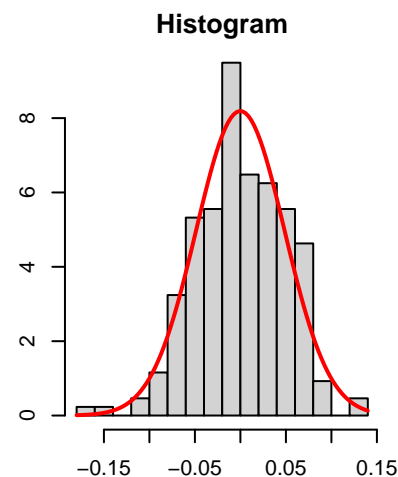
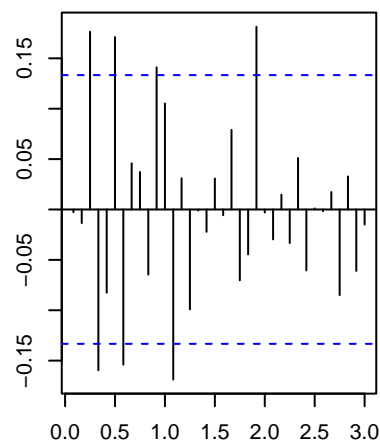
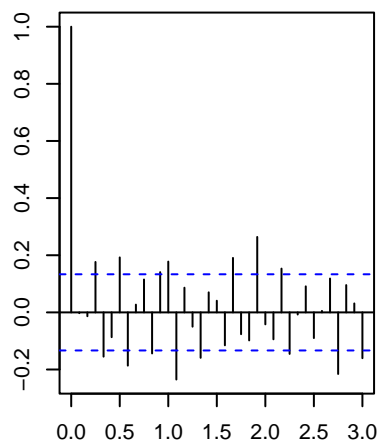
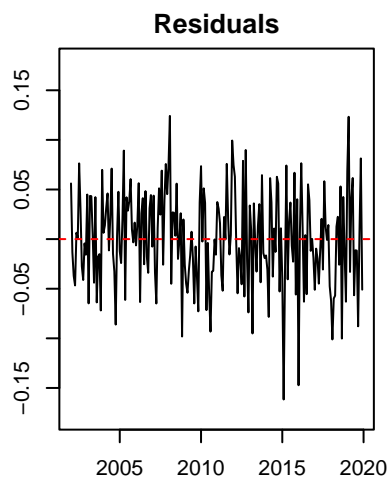
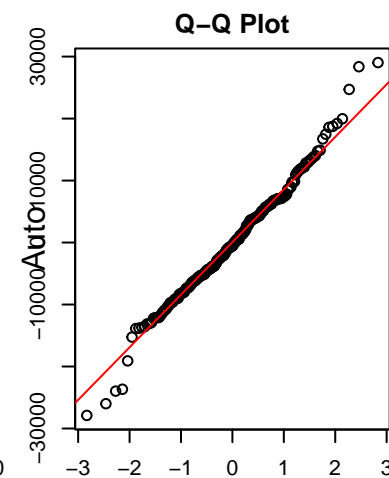
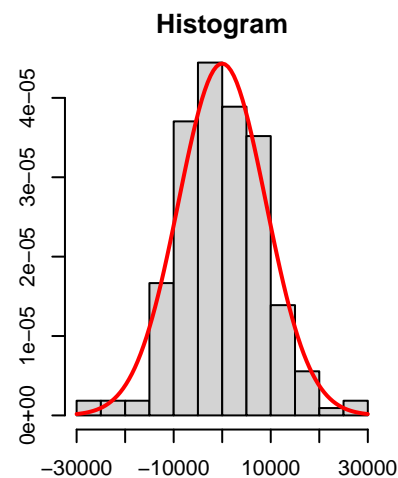
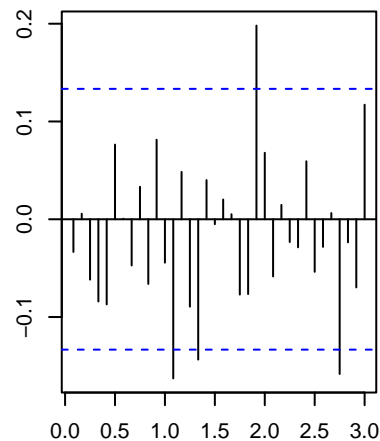
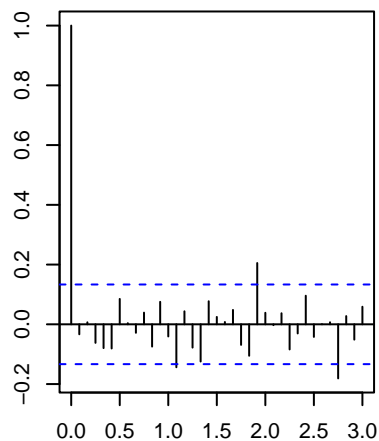
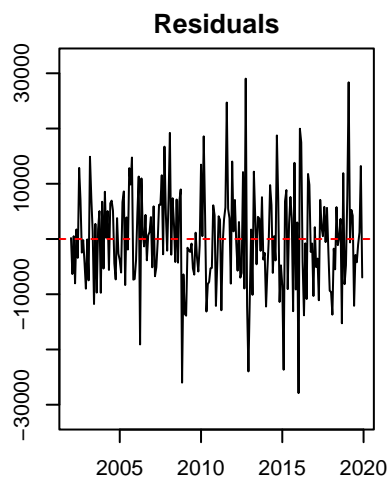
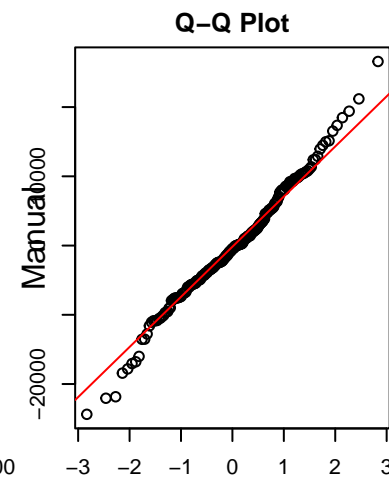
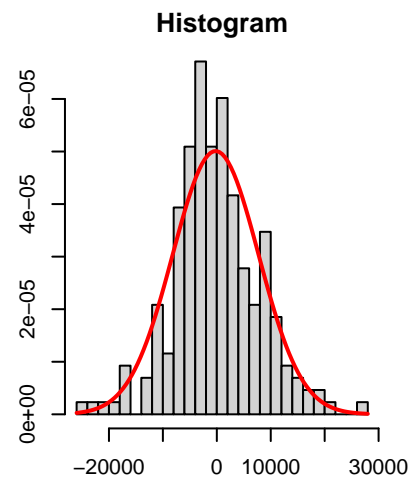
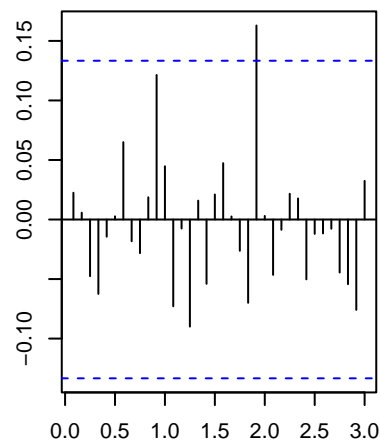
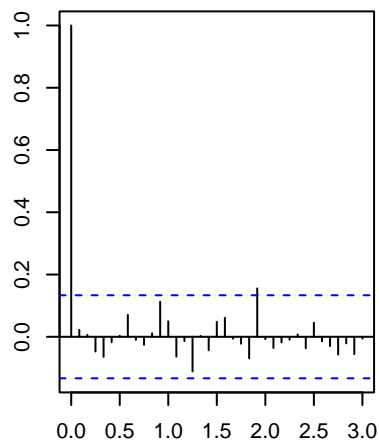
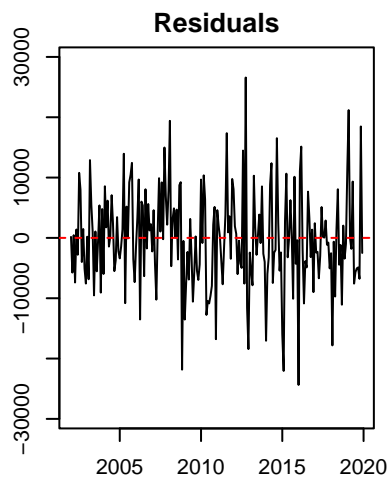


MODEL DIAGNOSTIC RESULTS

```
annual model: Manual: SARIMA(3,1,3)×(0,0,3)_1
  Ljung-Box Tests:
    lag=1: X2=8.04, p=0.00458, FAIL
    lag=11: X2=19.48, p=0.053, PASS
    lag=15: X2=21.30, p=0.127, PASS
  normality: W=0.973, p=0.000355, FAIL (not normal)
  H test: X2=56.95, p=8.07e-08, FAIL (ARCH effect)
  quality ratio: 0.086, PASS (no remaining seasonality)

Auto model: Auto: SARIMA(2,1,1)×(1,0,1)_12
  Ljung-Box Tests:
    lag=5: X2=10.40, p=0.0647, PASS
```

Enhanced Residual Diagnostics for Jurisdiction 30007

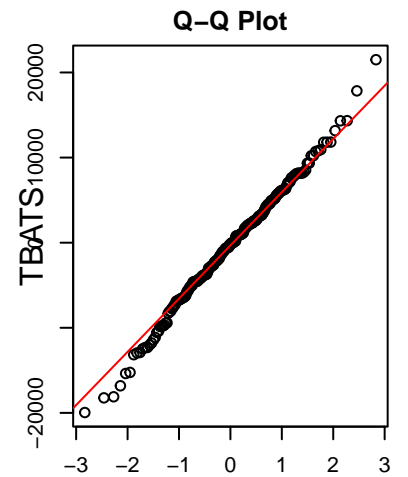
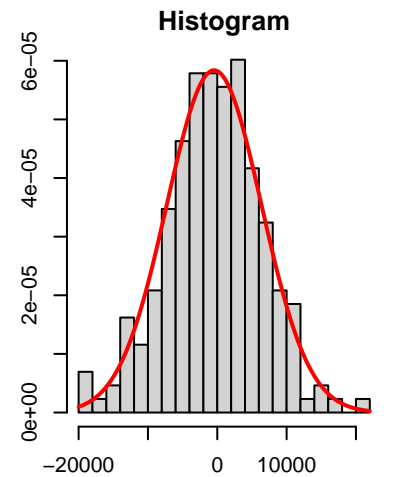
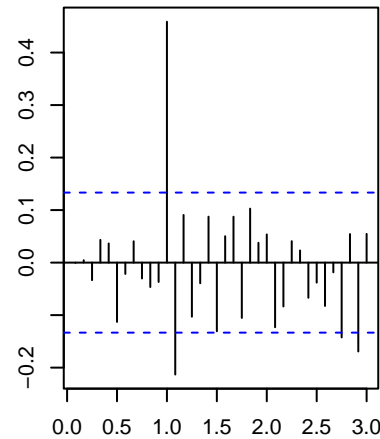
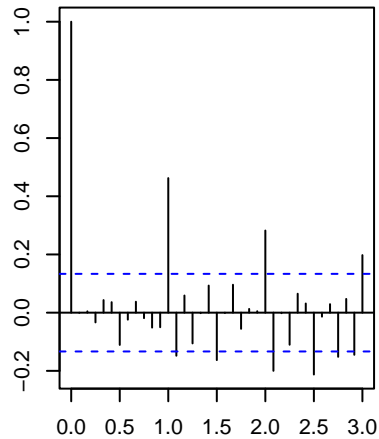
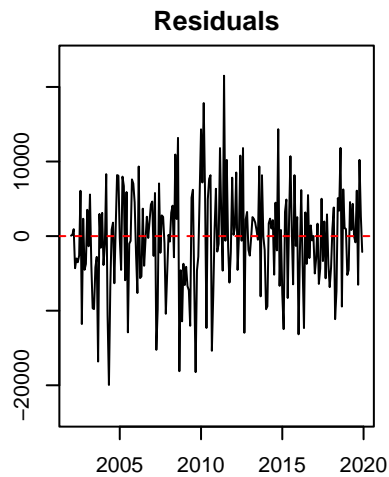
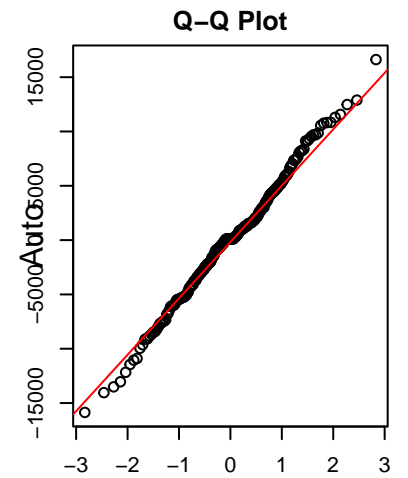
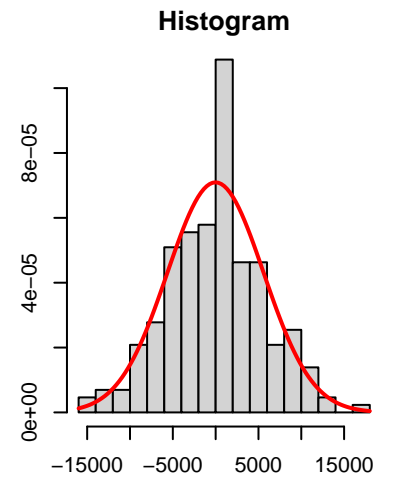
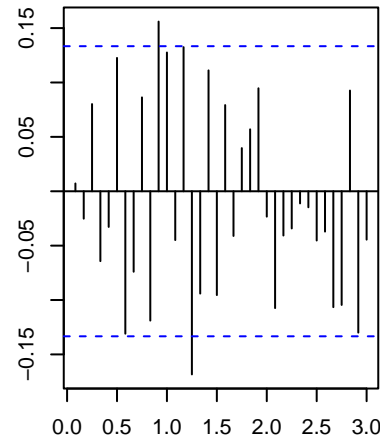
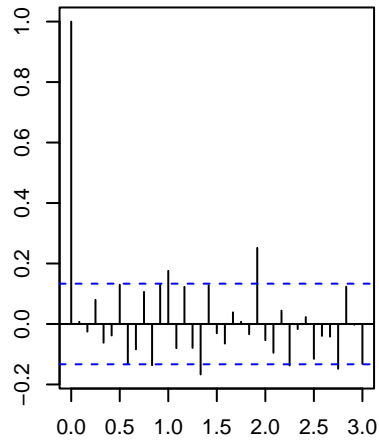
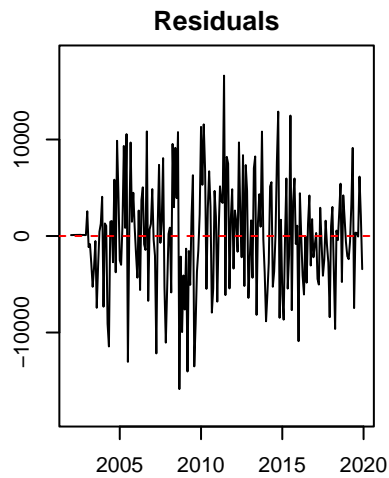
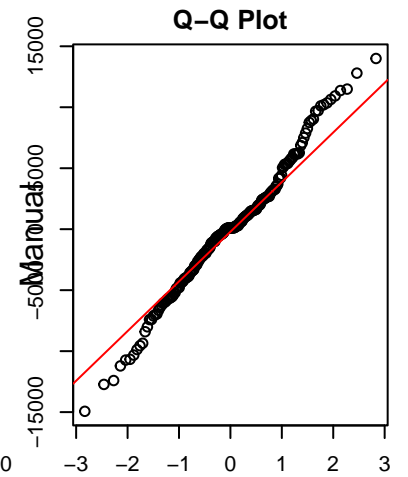
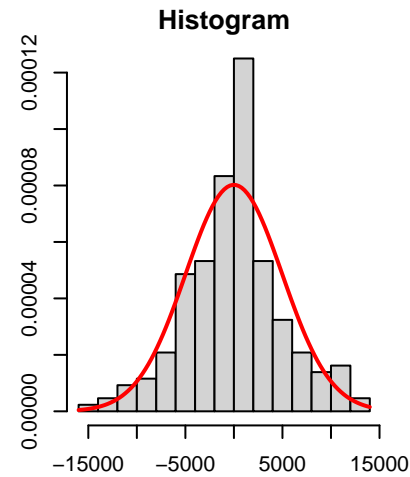
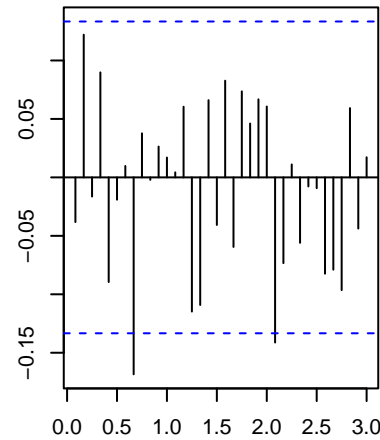
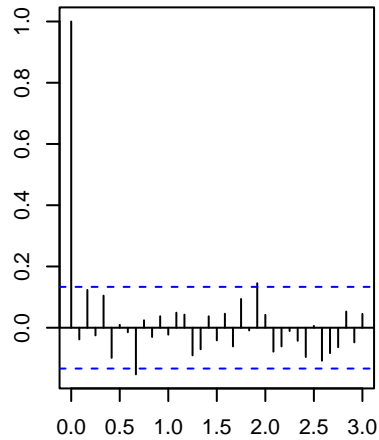
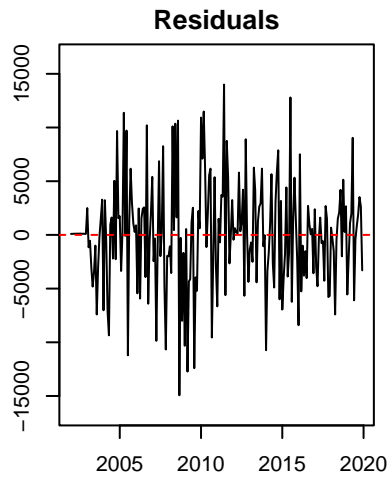


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(2,1,3)×(1,0,1)₁
Ljung-Box Tests:
lag=3: X2=2.92, p=0.404, PASS
lag=13: X2=12.19, p=0.512, PASS
lag=17: X2=19.39, p=0.307, PASS
Normality: W=0.989, p=0.102, PASS (normal)
RCH test: X2=14.52, p=0.269, PASS (const. va
sonality ratio: 0.106, FAIL (seasonality rem
CF plots and Ljung-Box tests show conflictin

Auto model: Auto: SARIMA(4,1,0)×(1,0,0)₁₂
Ljung-Box Tests:

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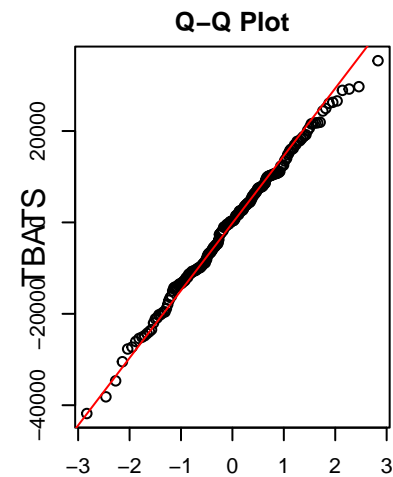
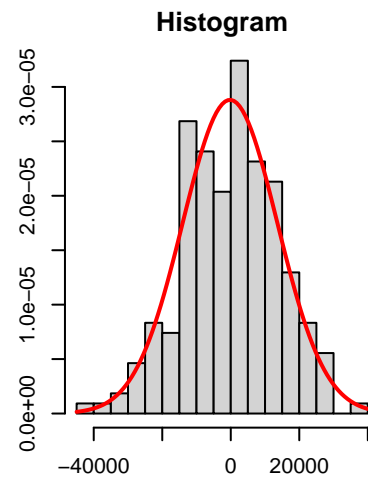
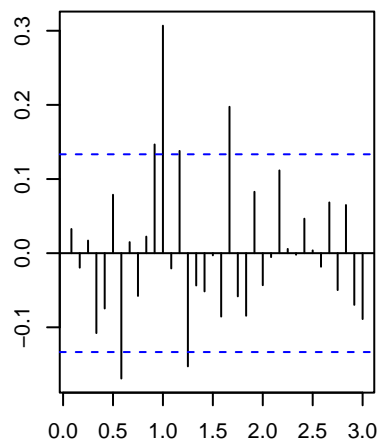
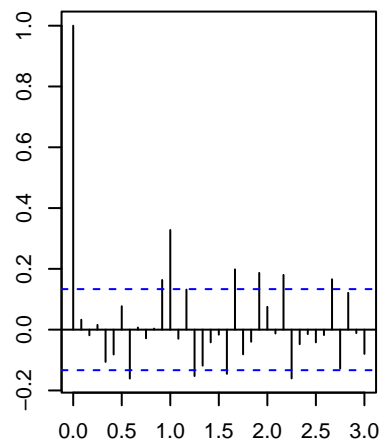
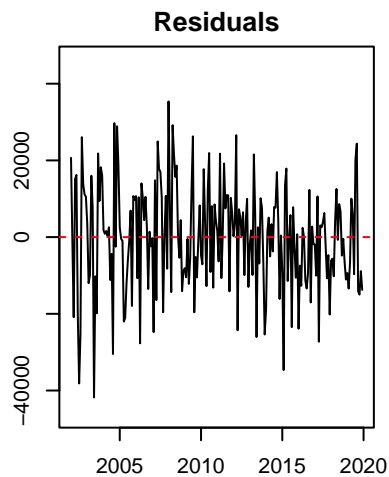
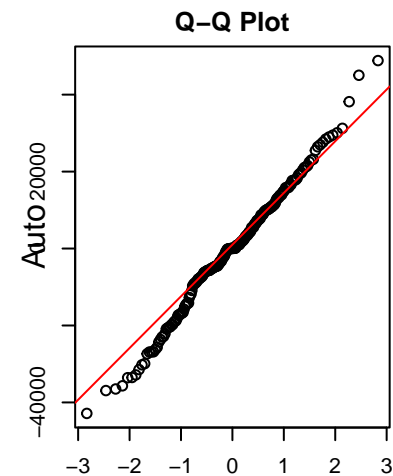
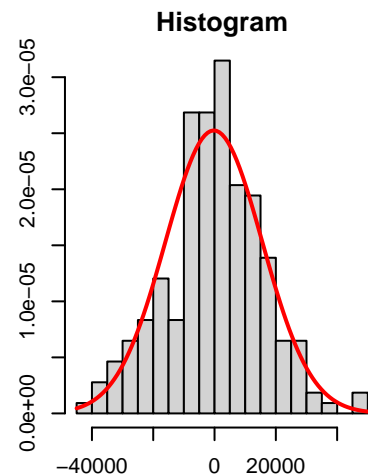
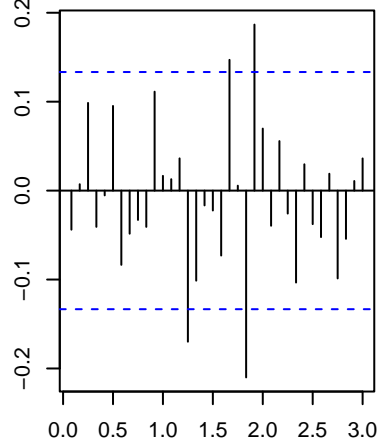
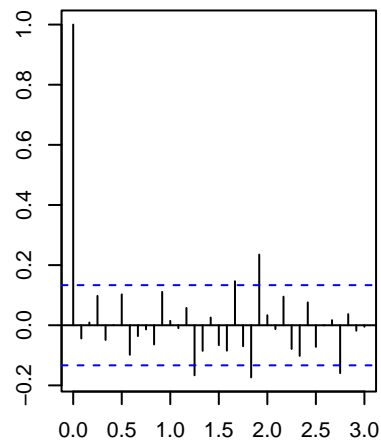
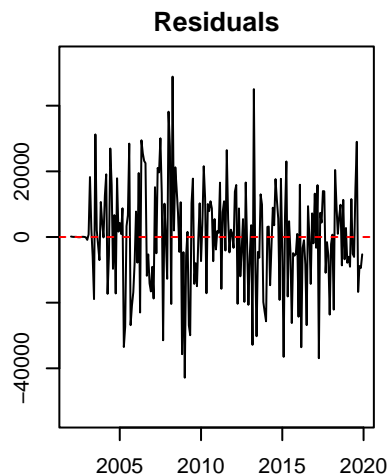
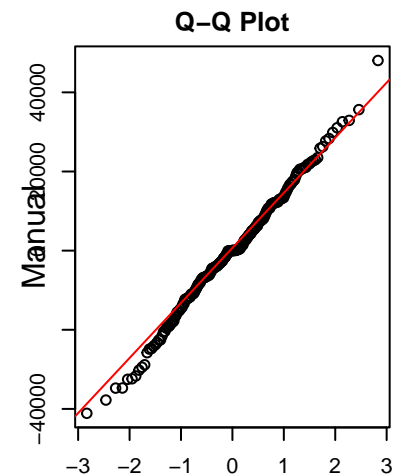
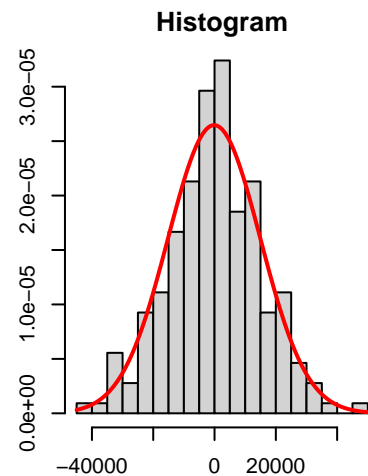
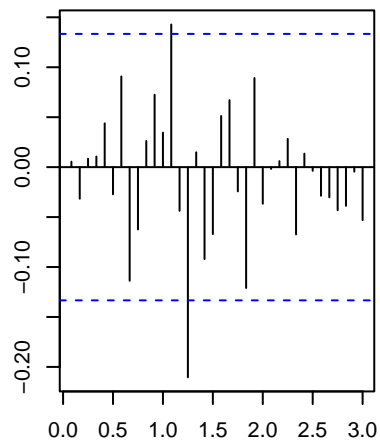
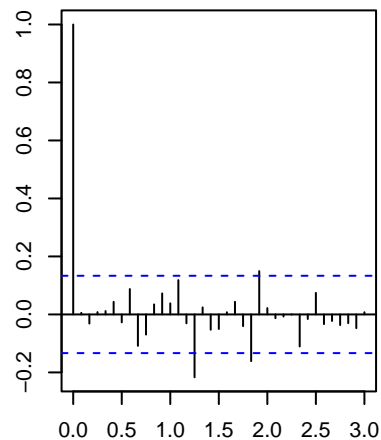
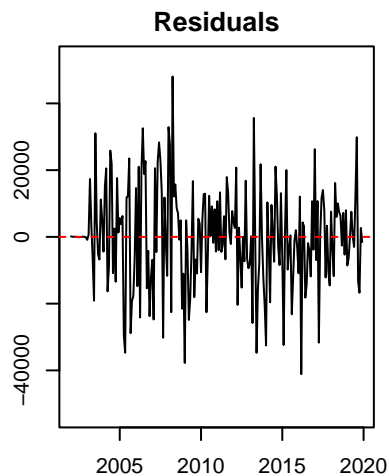


MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(3,0,3)×(1,1,1)_1
Ljung-Box Tests:
lag=2: X2=14.05, p=0.000889, FAIL
lag=12: X2=20.67, p=0.0554, PASS
lag=16: X2=28.39, p=0.0284, FAIL
Normality: W=0.987, p=0.0384, FAIL (not normal)
H test: X2=38.67, p=0.000119, FAIL (ARCH effect)
Quality ratio: 0.038, PASS (no remaining seasonality)

Auto model: Auto: SARIMA(1,0,2)×(0,1,1)_12
Ljung-Box Tests:
lag=6: X2=18.84, p=0.00444, FAIL

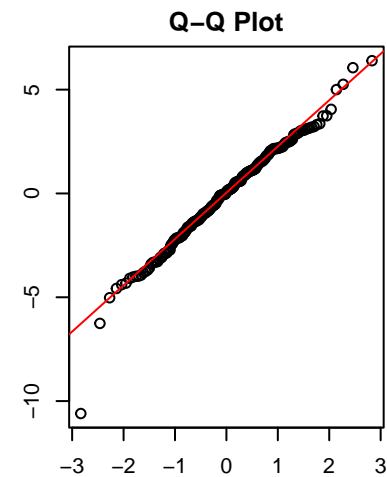
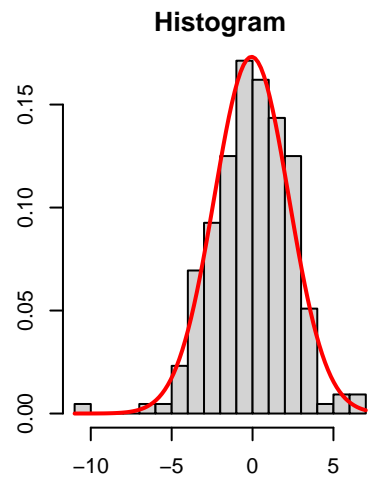
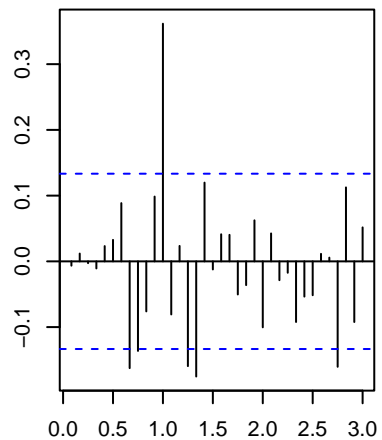
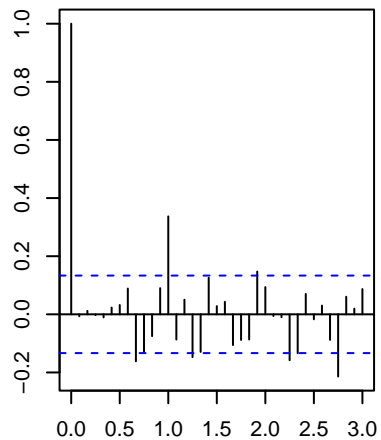
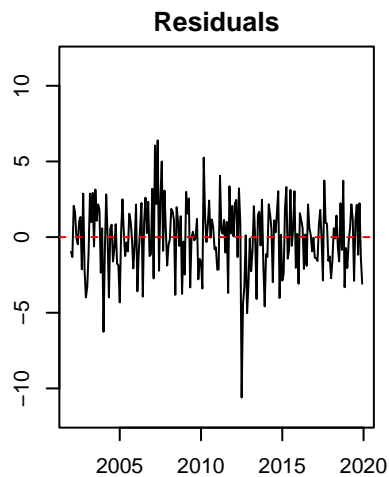
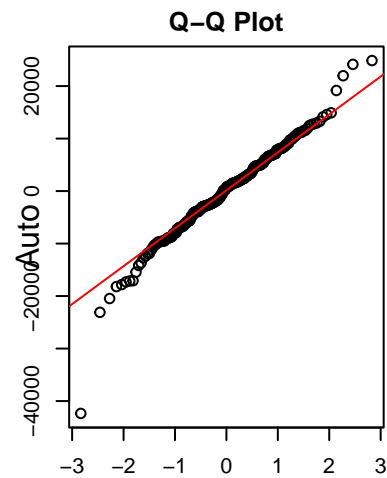
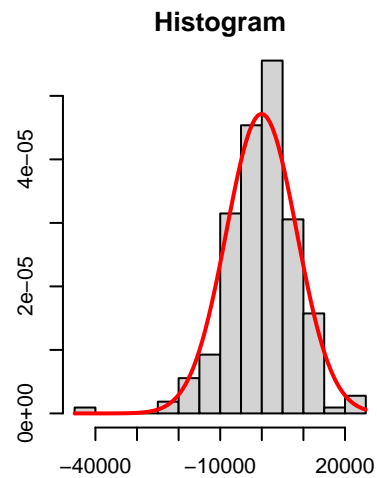
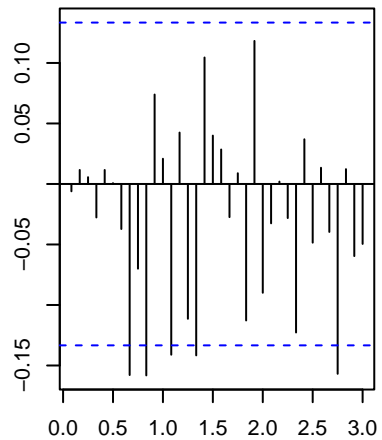
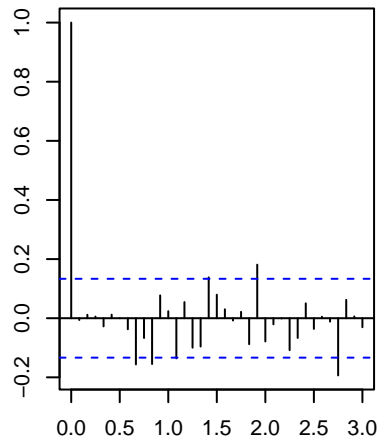
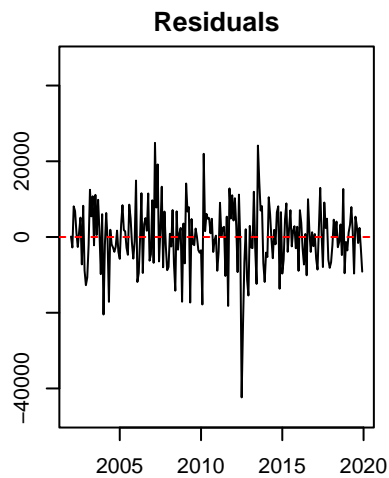
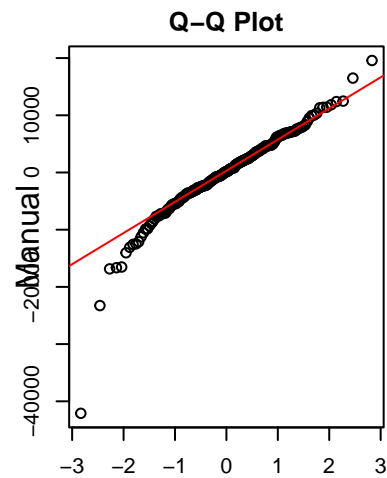
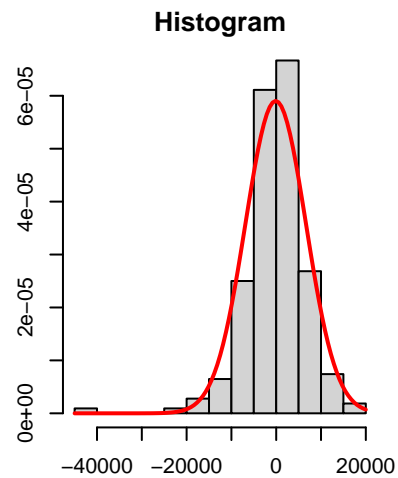
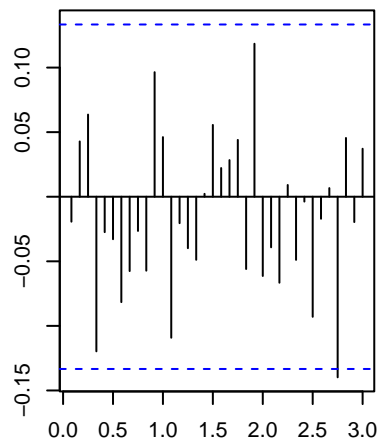
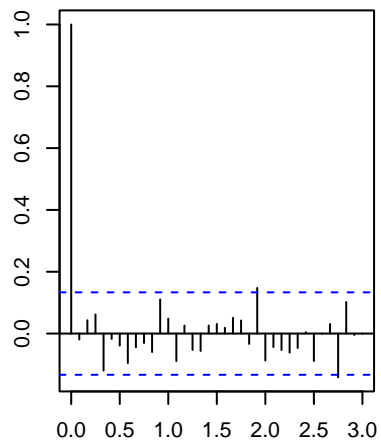
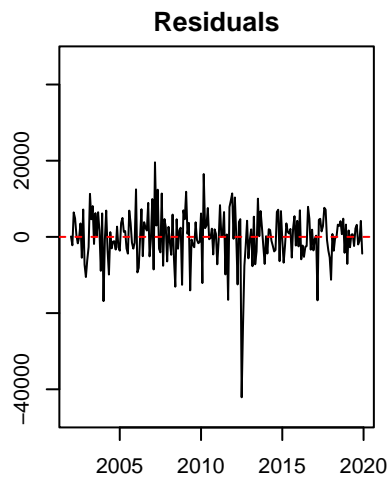
Enhanced Residual Diagnostics for Jurisdiction 50013



MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(3,1,3)×(0,1,1)_1
Ljung-Box Tests:
lag=3: X2=6.61, p=0.0853, PASS
lag=13: X2=24.51, p=0.0267, FAIL
lag=17: X2=36.76, p=0.00362, FAIL
Normality: W=0.995, p=0.683, PASS (normal)
H test: X2=35.94, p=0.000332, FAIL (ARCH eff
ality ratio: 0.045, PASS (no remaining seas
CF plots and Ljung-Box tests show conflictin

Auto model: Auto: SARIMA(1,1,2)×(1,1,1)_12
Ljung-Box Tests:



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TBATS

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MODEL DIAGNOSTIC RESULTS

annual model: Manual: SARIMA(0,1,1)x(3,0,3)_1
  Ljung-Box Tests:
    lag=3: X2=8.45, p=0.0376, FAIL
    lag=13: X2=16.30, p=0.233, PASS
    lag=17: X2=24.18, p=0.115, PASS
  normality: W=0.928, p=9.12e-09, FAIL (not norm
  RCH test: X2=15.25, p=0.228, PASS (const. va
  validity ratio: 0.037, PASS (no remaining seas

Auto model: Auto: SARIMA(4,1,0)x(1,0,0)_12
  Ljung-Box Tests:
    lag=5: X2=12.59, p=0.0275, FAIL
```